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Structural and Thermal Analysis of Hose for LNG Applications

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ABSTRACT

Finite element analysis (FEA) of the hose assembly used for transportation of Liquefied natural gas (LNG) has become a powerful tool in predicting the deformation and stress distributions. FEA helps in analyzing the model and optimizing the design in hostile environment. In the present work, computations are made to predict the maximum stresses caused due to structural and thermal effects in the LNG transportation. The analysis leads to the selection of the appropriate materials to be used and to the identification of both the most critical measurements and parameters.

Most engineering design methods are deterministic, but in reality, many engineering systems are stochastic in nature where probability assessments of the results are required. This probabilistic design analysis assumes the probability distribution of design parameters, instead of the mean values. These factors helps in designing a system which takes into account the safety, quality and the cost for the system.

In this present work, structural and thermal analyses of the system are carried out to find out the maximum stresses in the design and a probabilistic analysis is made to determine the critical design parameters responsible to optimize the design.

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To	Inside Temperature	Celsius
Po	Inside Pressure	Pa
ho	Inside Heat transfer coefficient	W/m^2C
D_i	Inside Diameter	m
E_1	1st layer Young's Modulus	Pa
$\alpha 1$	1st layer Thermal Expansion Coefficient	1/C
$\nu 1$	1st layer Poisson's ratio	--
t_1	1st layer thickness	m
k_1	1st layer thermal conductivity	W/m.C
E_2	2nd layer Young's Modulus	Pa
$\alpha 2$	2nd layer Thermal Expansion Coefficient	1/C
$\nu 2$	2nd layer Poisson's ratio	
t_2	2nd layer thickness	m
k_2	2nd layer thermal conductivity	W/m.C
E_3	3rd layer Young's Modulus	Pa
$\alpha 3$	3rd layer Thermal Expansion Coefficient	1/C

$\nu 3$	3rd layer Poisson's ratio	
t_3	3rd layer thickness	m
k_3	3rd layer thermal conductivity	W/m.C
E_4	4th layer Young's Modulus	Pa
$\alpha 4$	4th layer Thermal Expansion Coefficient	1/C
$\nu 4$	4th layer Poisson's ratio	
t_4	4th layer thickness	m
k_4	4th layer thermal conductivity	W/m.C
E_5	5th layer Young's Modulus	Pa
$\alpha 5$	5th layer Thermal Expansion Coefficient	1/C
$\nu 5$	5th layer Poisson's ratio	
t_5	5th layer thickness	m
k_5	5th layer thermal conductivity	W/m.C
E_6	6th layer Young's Modulus	Pa
$\alpha 6$	6th layer Thermal Expansion Coefficient	1/C
$\nu 6$	6th layer Poisson's ratio	
t_6	6th layer thickness	m
k_6	6th layer thermal conductivity	W/m.C
E_7	7th layer Young's Modulus	Pa
$\alpha 1$	7th layer Thermal Expansion Coefficient	1/C
$\nu 1$	7th layer Poisson's ratio	
t_7	7th layer thickness	m

k_7	7^{th} layer thermal conductivity	W/m.C
T_{inf}	Outside Temperature	Celsius
h_{inf}	Outside Heat transfer Coefficient	W/m^2C

CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

The LNG industry has become a mature industry in about 30 years time span. It is transforming to meet the needs of the future. Gas reserves are increasingly being discovered in offshore reservoirs, often in deep water. Offshore LNG gas and import terminals offer a cost effective solution to supplying gas to customers. One of the greatest challenges of these plants and terminals is the offshore transfer of LNG. Offshore loading is complicated because both the LNG terminal and LNG ship is moving independently. The older method of transfer by means of articulated loading arms has been replaced by a new system of LNG transfer by means of composite flexible hoses.

Flexible LNG Hose Concept:

The following are the characteristics of an LNG hose:

1) The transfer system must be flexible to account for all types of LNG carriers.

2) The System must be safe and reliable.

3) The hose must not be a limiting factor due to environmental and weather conditions.

4) To avoid the frequent replacement or maintenance of the hoses the design must be good enough to use the hose for long periods of time.

By keeping in mind the above concepts there are two types of hoses use to transfer the LNG.

a) a composite hose consisting of layers of polymer fabric and film wound around with stainless steel wires.

b) corrugated stainless steel hose.

The composite hoses have edge over the corrugated ones as the latter cannot withstand torsion loads.

Over the years, many organizations/companies started to manufacture and test various types of flexible hoses. These industries not only deal with manufacturing of flexible hoses but also offshore loading systems and LNG carrier operations and planning. They have complete package from mooring system to complete transfer of LNG on ship to ship transfer basis (STS). Senior Flexonics (Compoflex Hose Company) is developing cryogenic hose since 1971. In 1998 ExxonMobil in association with Senior Flexonics conducted various dynamic and static tests on a 20" flexible hose which was later accepted and manufactured. MARINTEK and Fendercare Integrated Mooring Solutions are some other organizations using advanced design and test for manufacturing of flexible hoses. ExxonMobil, Conoco Philips, Chevron Global Gas, Hoegh LNG, Kawasaki Heavy Industries Ltd, etc are manufacturers and suppliers of LNG hoses [1,2].

The purpose of this work is to analyze the flexible hose used to transfer LNG for the given environmental and boundary conditions. Steady state Structural and Thermal Analysis is carried out on the hose for the boundary conditions followed by probabilistic

analysis to ensure the accuracy of the results. The axisymmetric finite element model of the hose is considered for analysis. The areas of high stress concentration and respective deformation are studied. The thermal analysis yields the temperature distribution and thermal stresses among the various composite layers.

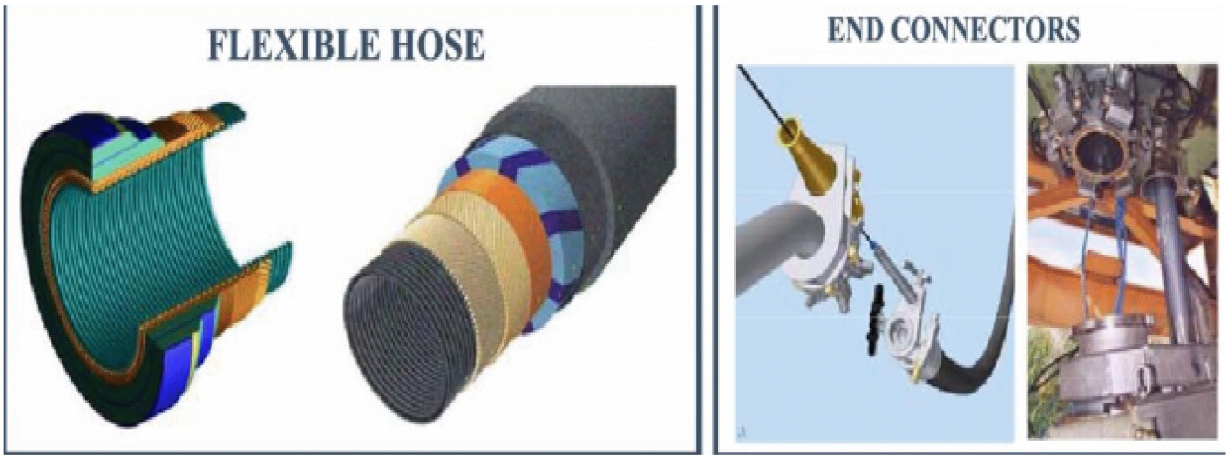


Fig 1: Flexible Hose.

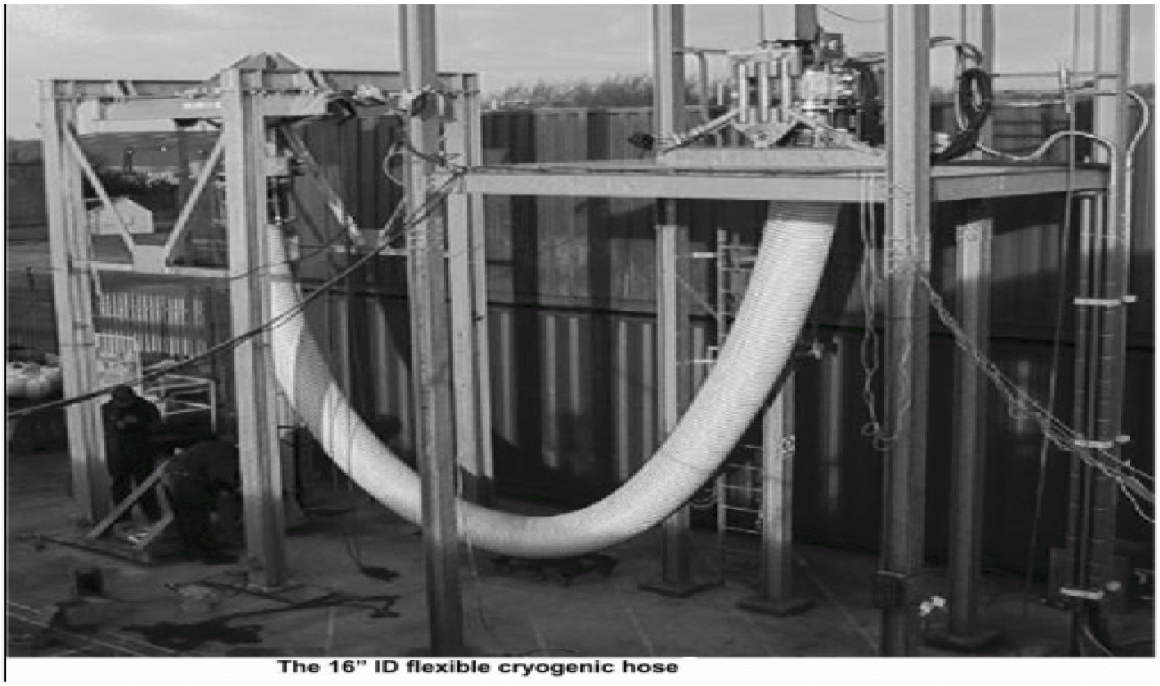


Fig 2: 16" ID flexible hose.

CHAPTER II

PROBLEM STATEMENT

The manufacturing of flexible hose requires wrapping of many intertwining layers of high strength stainless steel carcass and special polymers, the material price of a flexible line is hundreds of times more expensive than an equivalent high strength carbon steel pipe. Consequently, general use is limited to special applications and in small quantities compared to use of high strength carbon steel pipe.

Ultra-deepwater use of flexible hose is limited, due to the inability of these pipes to withstand high external hydrostatic pressure. Presently, the maximum depth at which flexible hoses have been used is 2000m.

The main flexible hose layers are shown in Figure 3. The material make-up of each layer is described below.

Layer 1: Carcass. The carcass is a spirally wound interlocking structure manufactured from a metallic strip. The carcass prevents collapse of the inner liner and provides mechanical protection against pigging tools and abrasive particles.

Layer 2: Inner liner. This is an extruded polymer layer that confines the internal fluid integrity.

Layer 3: Pressure armor. This consists of a number of structural layers comprised of helically wound C-shaped metallic wires and/or metallic strips. The pressure armor layers provide resistance to radial loads.

Layer 4: Tensile armor. The tensile armor layers provide resistance to axial tension loads. This is made up of a number of structural layers consisting of helically wound flat metallic wires. The layers are counter wound in pairs.

Layer 5: Outer sheath. The outer sheath is an extruded polymer layer. Its function is to shield the pipe's structural elements from the outer environment and to give mechanical protection.

Fig 3: Flexible hose Layers.

These are the primary layers. Some of the other layers that are not shown are the anti-wear layers and insulation layers. The anti-wear layers are non-metallic layers that are inserted between the structural elements to prevent wear and tear between the structural elements. Additional layers of material with low thermal conductivity can be applied in order to obtain specific thermal insulation properties of the pipe.

All the flexible hoses have the same fundamental concept. Some variation may occur in choice of materials in case of special operating environments such as high pressures, high temperatures, sour service (high H2S and/or CO2 content), deep water, etc.

The end fitting of the flexible hose is extremely important as it seals the different layers preventing any water ingress and also allows it to be connected to other pipeline. The common end fittings that are used are [3]:

. Flanges

. Grayloc connectors

. Hydraulic subsea connectors

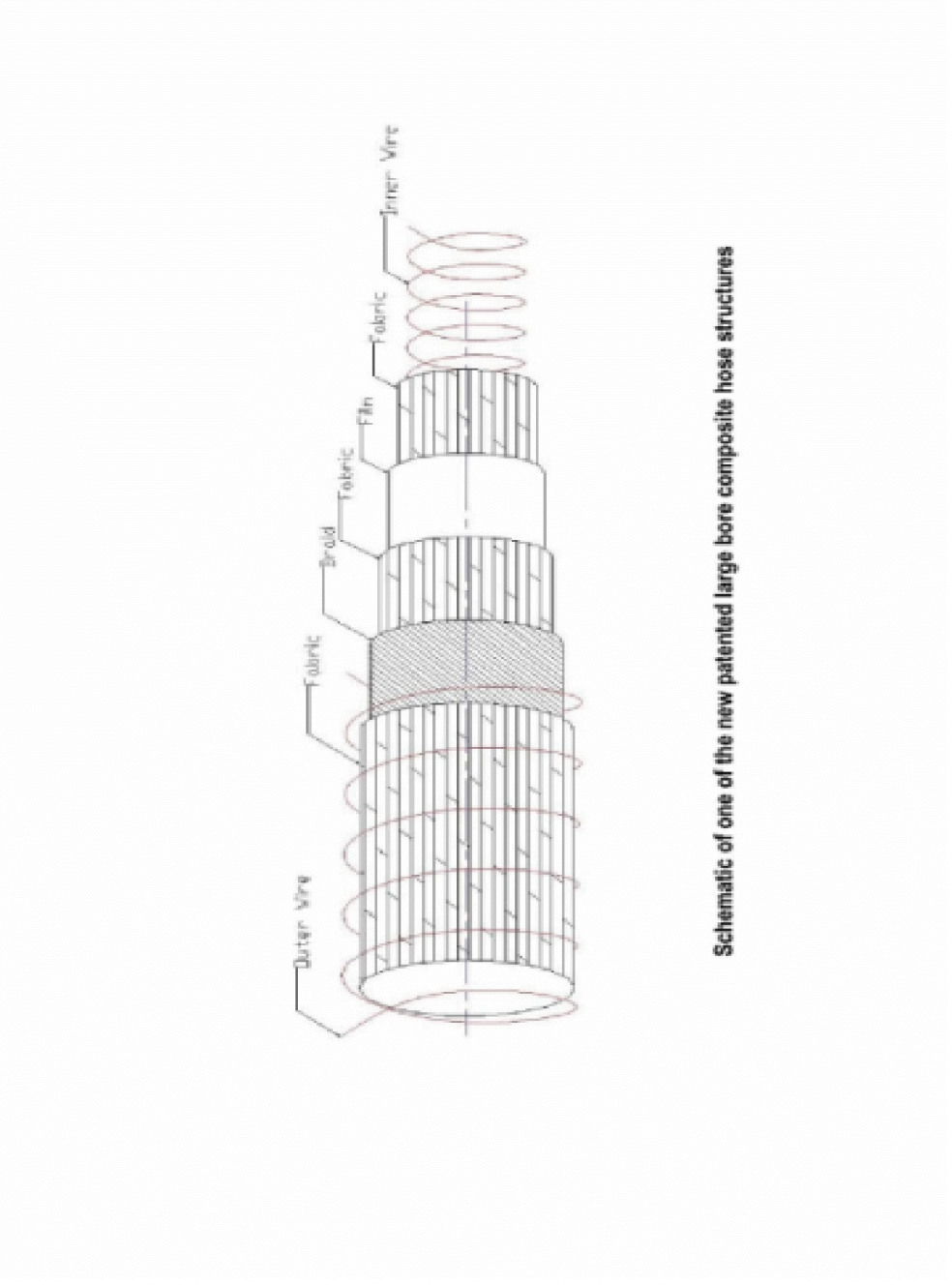


Fig 4: Flexible Hose Layers.

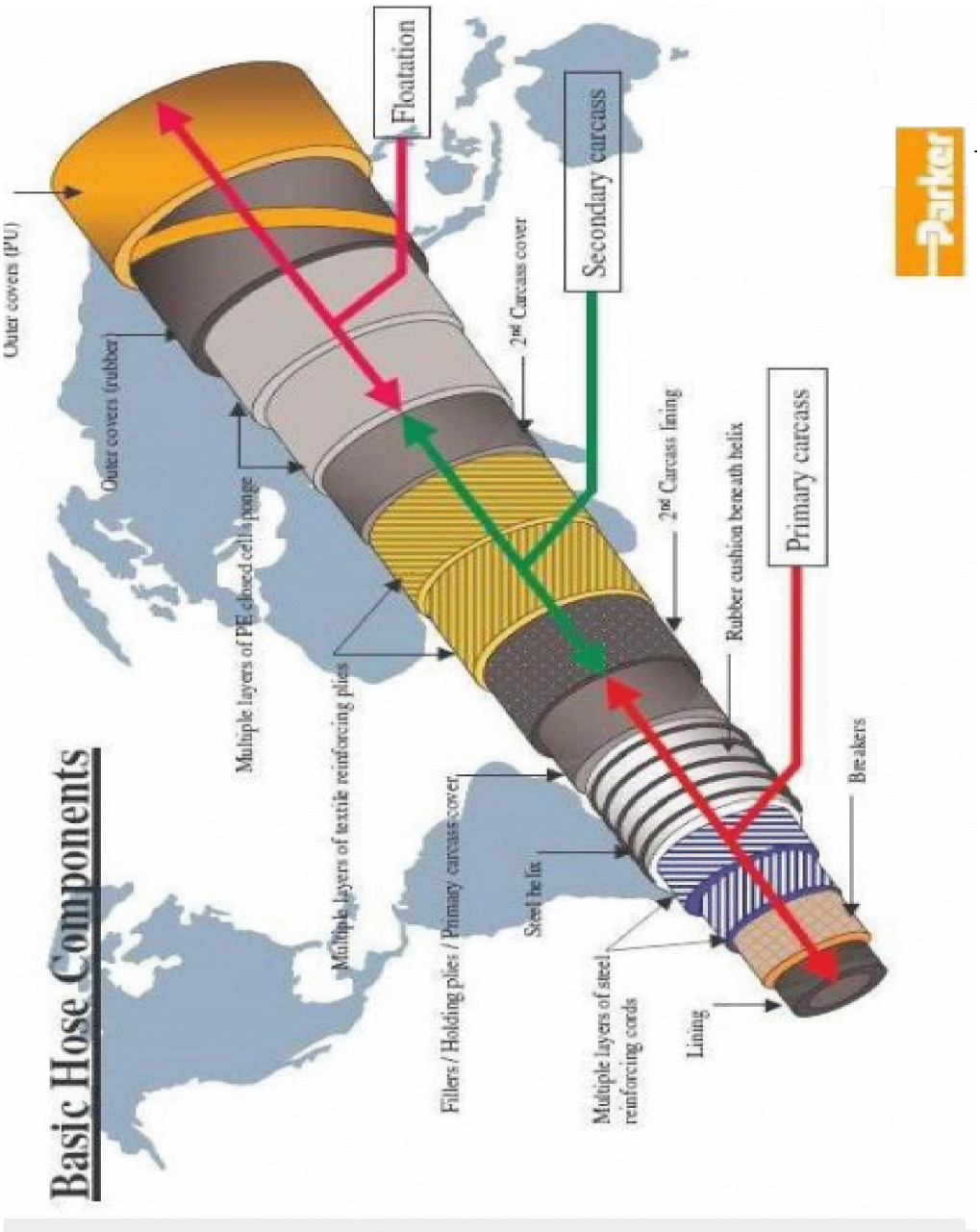


Fig 5: Basic Hose Components.

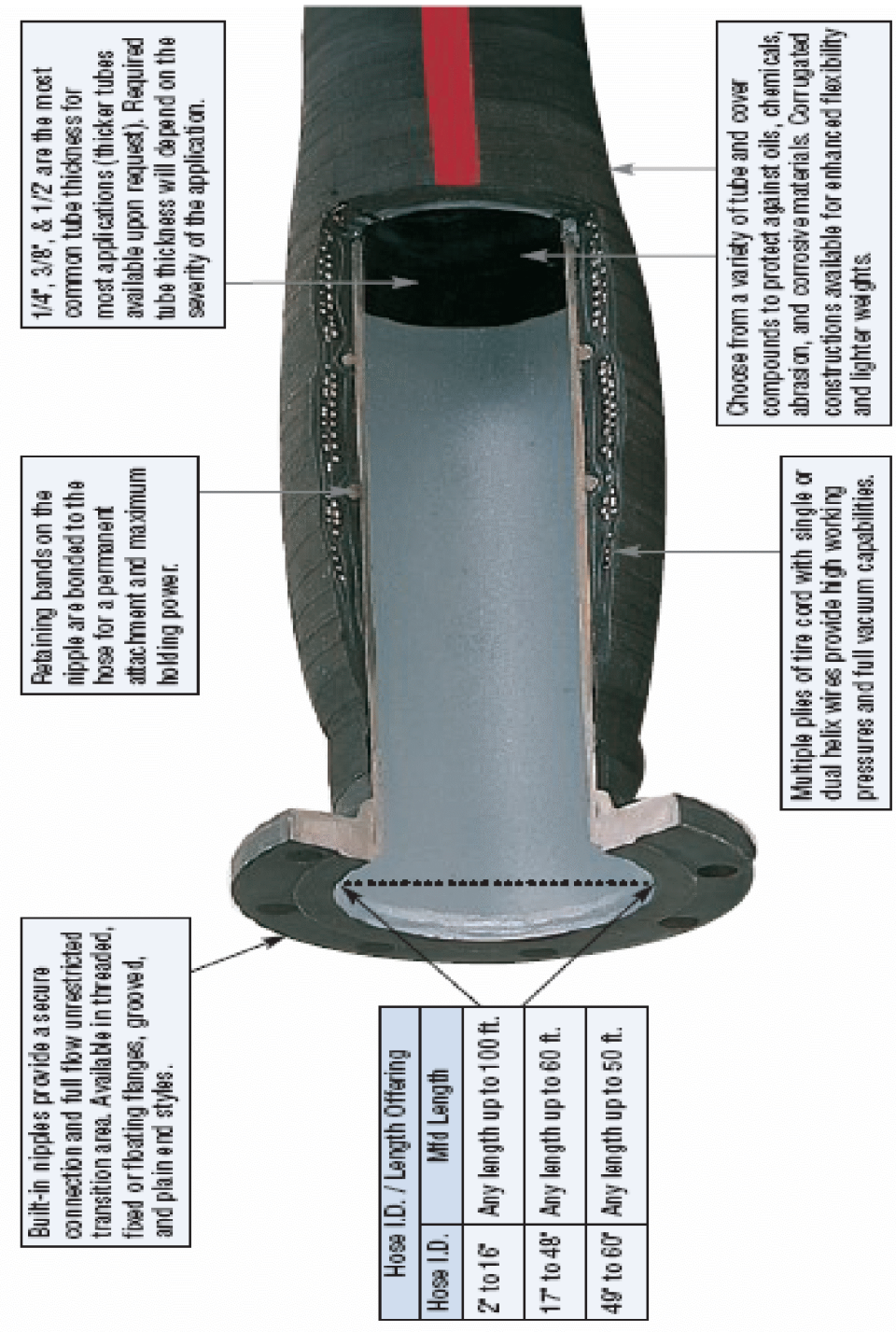


Fig 6: Typical Custom made HOSE.

In the present case, we have a series of hoses connected to each other to transfer the Liquefied natural gas from one ship to the other. Given the wide variance in water depth and environmental conditions between the potential sites the transfer of the gas becomes difficult.

The given hose consists of 15 layers put together in 3 sections named Inner layer, 1^{st} Carcass and the Buoyancy layer. The hose is installed on a steel hollow round bar called the Nipple. There is an internal pressure of 150 psi inside the hose. The Liquefied Natural Gas is flowing through the hose at a temperature of -160^{0}C. The outside temperature is 30^{0}C. The inside heat transfer coefficient (h) is 4970.7 $W/m^{2}K$ while the outside heat transfer coefficient (h) is 0.21 $W/m^{2}K$. The structural and thermal properties of the layers are shown in Table 1. The Nipple is made of ASME SA240 A316L steel material.

The main objective of the present work is to analyze, test and verify the area of maximum stress concentration and deformation in the hose. The work was based on the information and details provided by an organization specialized in motion controls. Initially, a 3-D deterministic finite element analysis was carried out by using a finite element code ANSYS 11.0 to find out the distribution of stresses and then the hose system was probabilistically evaluated in view of the several uncertainties in the fluid, structural, material, thermal and geometry variables that govern the hose system. The stresses and their variations were evaluated at critical points in the hose. Cumulative distribution functions and sensitivity factors were computed for stress responses due to the fluid, mechanical, thermal and geometry random variables. Probabilistic analysis was carried out with the help of NESSUM software.

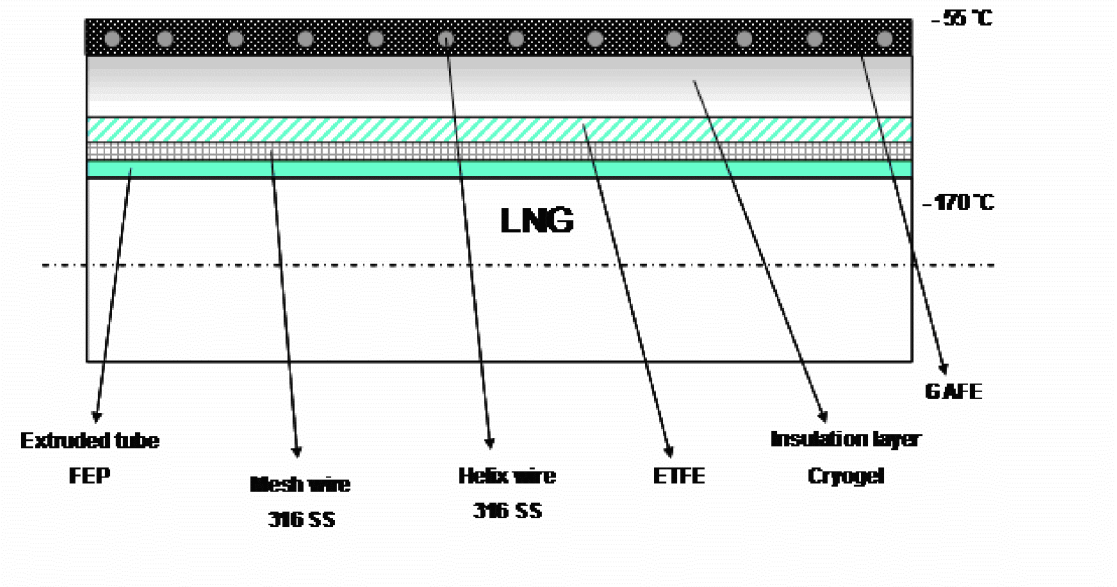


Fig 7: Inner Layers of the Hose.

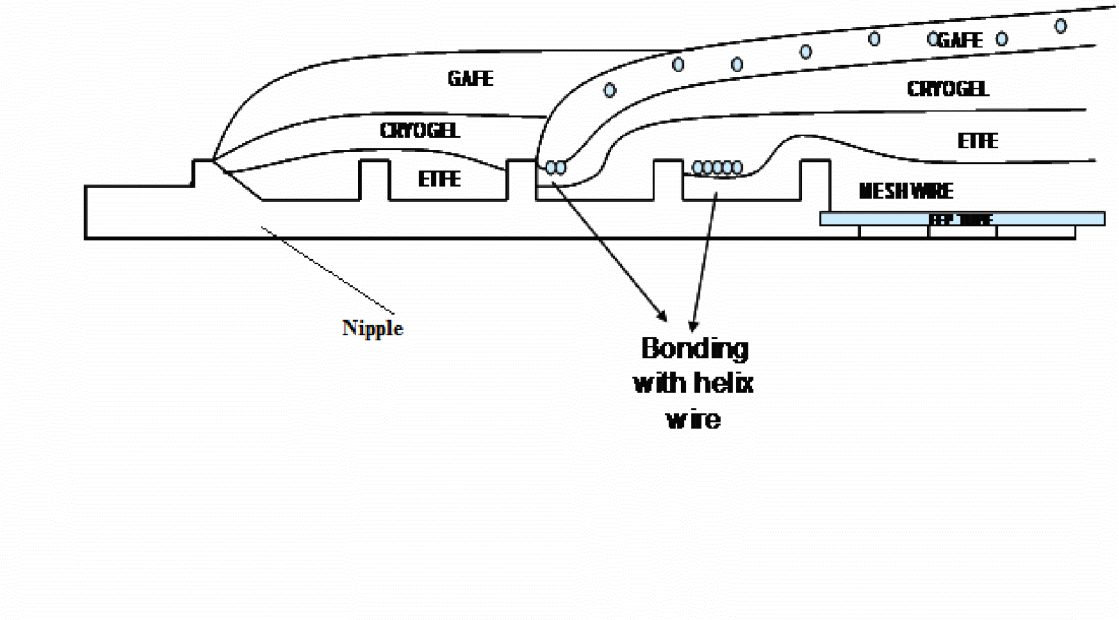


Fig 8: The hose and Nipple Contact.

Structural Properties:					Thermal Properties:	
Name (Layer)	Material	Thickness(mm)	Poissons Ratio	Youngs Modulus	Thermal Conductivity	Thermal Expansion
					W/mC	1/C
Inner Layers						
Extruded Tube	FEP	2	0.48	50000 psi	0.24	0.00009
Wire Mesh	316 SS	40	0.27-0.3	193 GPA	16.3	0.000012
Tape	ETFE	1.4	0.35	159500 psi	0.24	0.00013
Insulation	Cryogel	20	0.49	940 MPA	0.012	0.0001
Layer	Gafe	2	0.4	1.5 MPA	0.21	0.00011
1st Carcass						
Breaker	Brunico 4023	1.3	0.4	10000 N/5cm	0.21	0.00011
Layers of Textile 1-2	Pace 4023	4.6	0.4	5490 N	0.21	0
Layers of Textile 3-6	Pace 4023	9.2	0.4	5490 N	0.21	0
Rubber Cushion	Gafe	5	0.4	1.5 MPA	0.21	0.00011
Cover Layer	Brunico 4023	1.3	0.4	1000 N/5cm	0.21	0.00011
Layers of Textile 7-8	Pace 4023	4.6	0.4	5490 N	0.21	0
Subcover	Gafe	2	0.4	1.5 MPA	0.21	0.00011
Breaker 2	Brunico 4023	1.3	0.4	10000 N/5cm	0.21	0.00011
Cover layer 2	TSU	1.5	0.4	2.31 MPA	0.21	0.00011
Buoyancy						
Floating Material	Landa Grigia	88	0.4	2 MPA		0.00011

Table 1: Structural/Thermal Properties of layers.

Due to the axisymmetric nature of the model, we considered $1/8^{th}$ portion of the geometry for the assembly. This saves computational time for the analysis. Figure 10 shows the layer details on $1/8^{th}$ model.

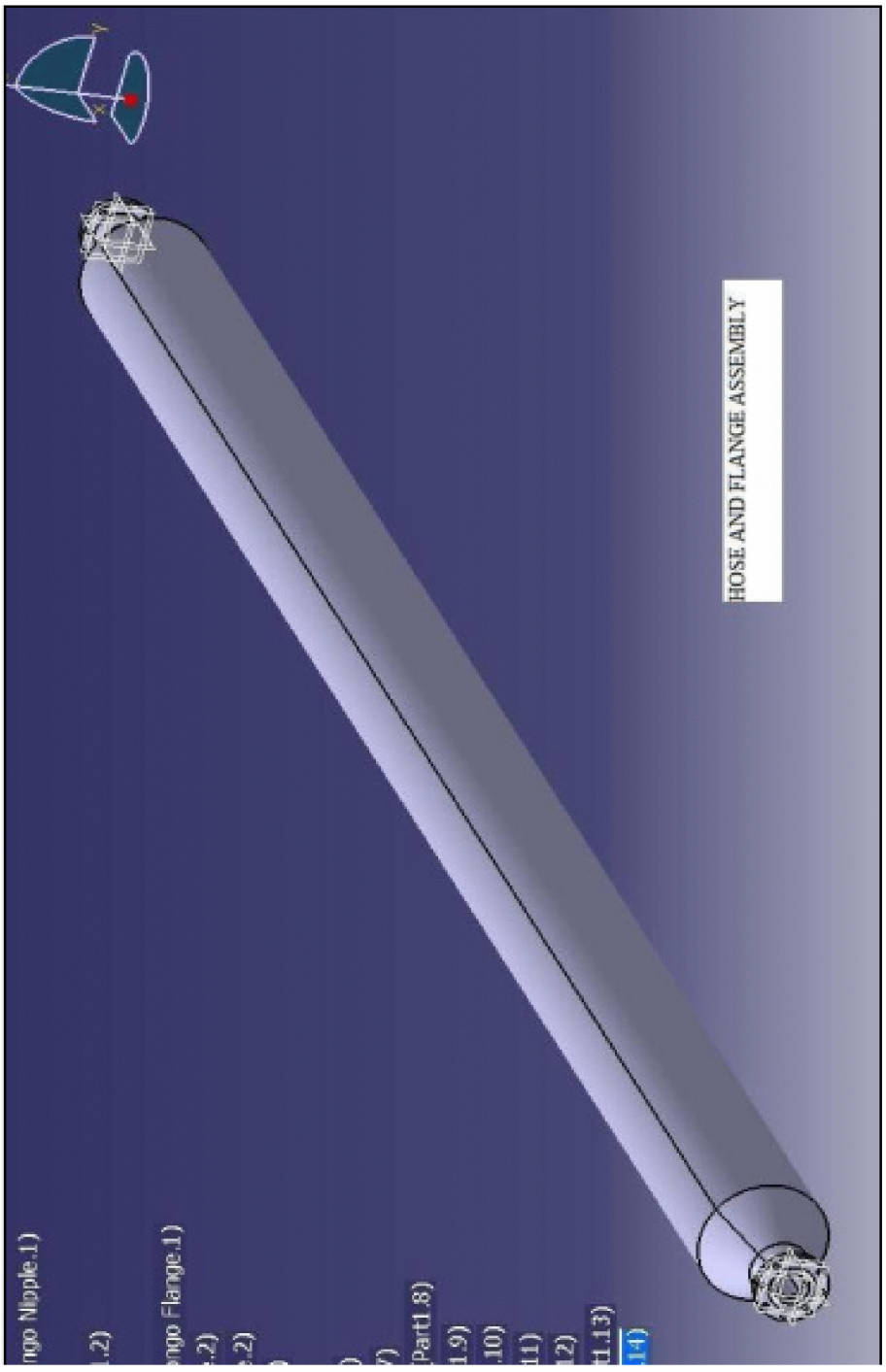


Fig 9: Hose and Flange Assembly.

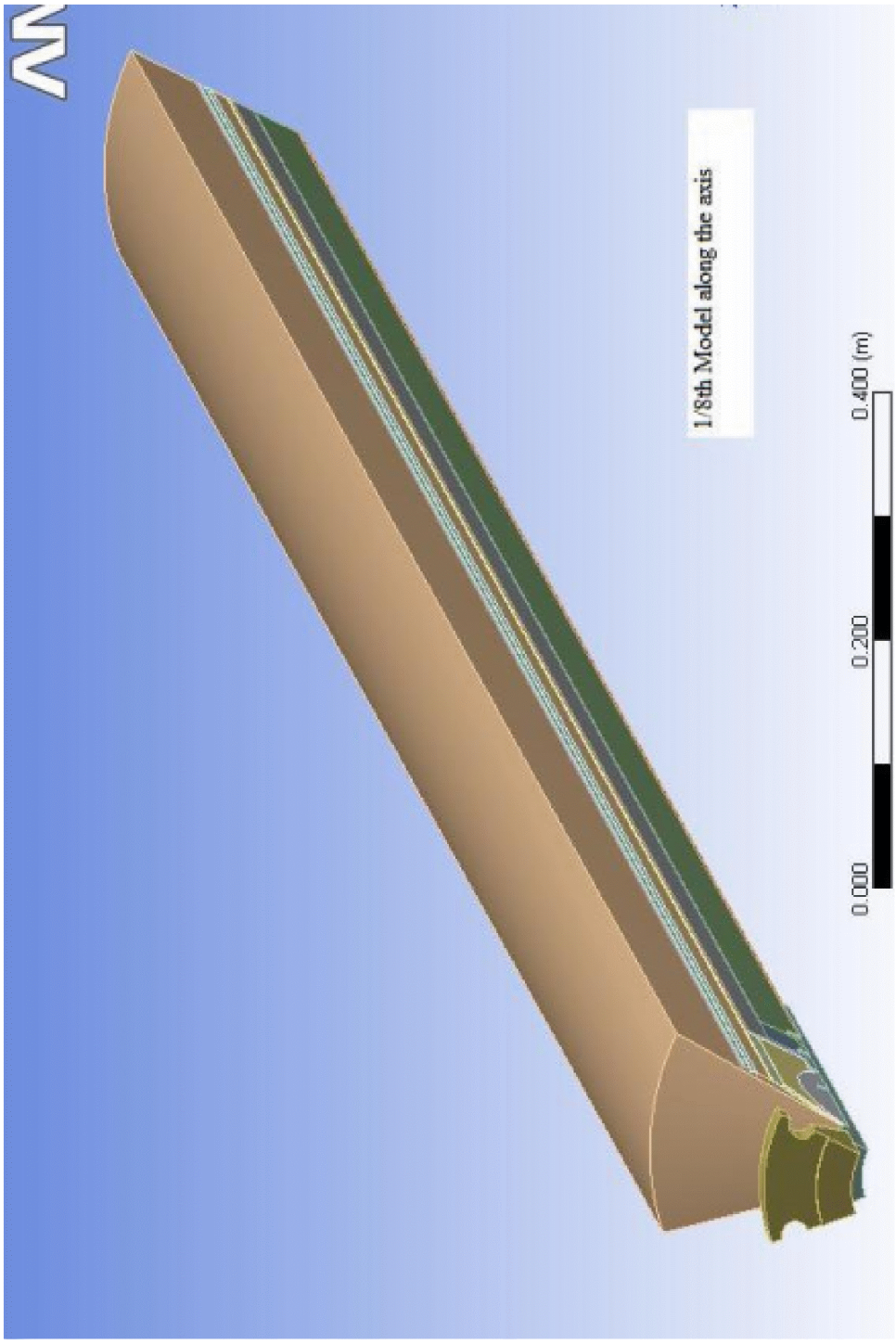


Fig 10: 1/8th Model

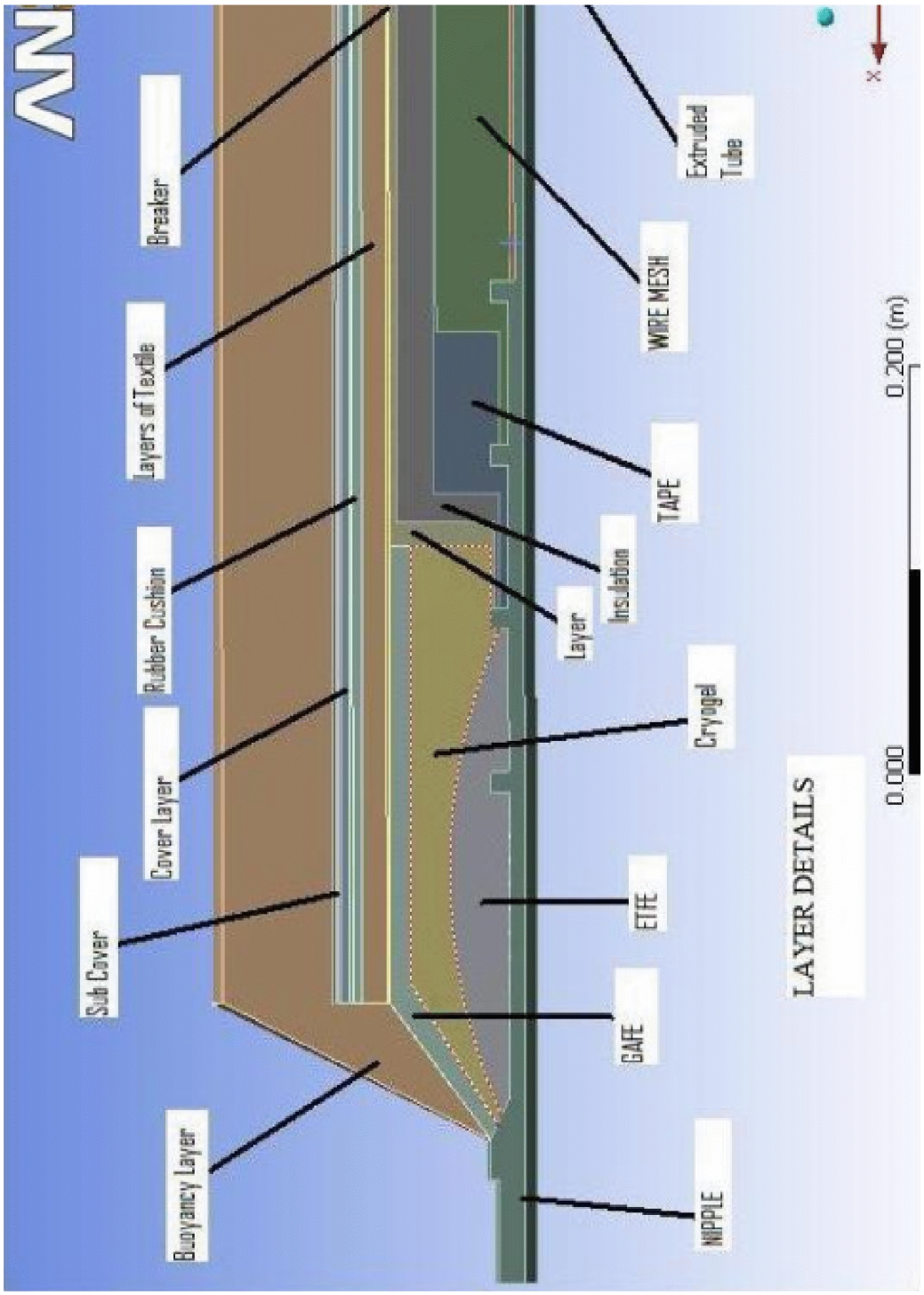


Fig 11: Layer Details.

CHAPTER III

FINITE ELEMENT ANALYSIS

We reduce our problem into axisymmetric environment. Axisymmetric problems are solved using a cylindrical coordinate system with coordinates r, θ, z (Fig 11). The elasticity quantities in this coordinate system are discussed by Fung (1965) and summarized here.

The vector of stress components is

$$\{\sigma\}^T = [\sigma_{rr} \quad \sigma_{\theta\theta} \quad \sigma_{zz} \quad \sigma_{r\theta} \quad \sigma_{rz} \quad \sigma_{\theta z}] \tag{1}$$

The elastic strain components are

$$\{\varepsilon\} = [\varepsilon_{rr} \quad \varepsilon_{\theta\theta} \quad \varepsilon_{zz} \quad \varepsilon_{r\theta} \quad \varepsilon_{rz} \quad \varepsilon_{\theta z}] \tag{2}$$

and the total strain components are

$$\{e\}^T = [e_{rr} \quad e_{\theta\theta} \quad e_{zz} \quad e_{r\theta} \quad e_{rz} \quad e_{\theta z}] \tag{3}$$

The thermal strain vector is given by

$$\{ \varepsilon_T \}^T = [\alpha\delta T \quad \alpha\delta T \quad \alpha\delta T \quad 0 \quad 0 \quad 0] \tag{4}$$

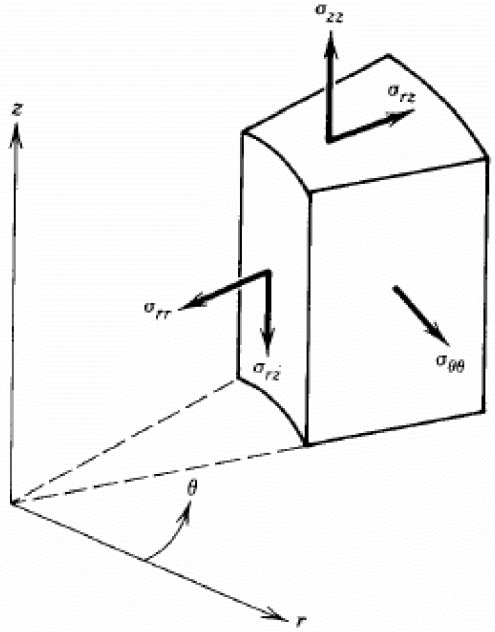
where α is the coefficient of thermal expansion.

Hooke's law is given by,

$$\{ \sigma \} = [\mathrm{D}] \{ e \}$$

where [D] is given by

$$[\mathrm{D}] = \frac{1}{E} \begin{bmatrix} 1 & -\mu & -\mu & 0 & 0 & 0 \\ -\mu & 1 & -\mu & 0 & 0 & 0 \\ -\mu & -\mu & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & a & 0 & 0 \\ 0 & 0 & 0 & 0 & a & 0 \\ 0 & 0 & 0 & 0 & 0 & a \end{bmatrix}$$



The stress components in a cylindrical coordinate system.

Fig 12: Stress Components in a cylindrical coordinate system.

The equations that define the relationship between the total strains and the three displacements are given as follows.

$$e_{rr} = \frac{\partial u}{\partial r} \qquad e_{r\theta} = \frac{1}{r}\frac{\partial u}{\partial \theta} + \frac{\partial v}{\partial r} - \frac{v}{r}$$

$$e_{\theta\theta} = \frac{u}{r} + \frac{1}{r}\frac{\partial v}{\partial \theta} \qquad e_{rz} = \frac{\partial u}{\partial z} + \frac{\partial w}{\partial r}$$

$$e_{zz} = \frac{\partial w}{\partial z} \qquad e_{\theta z} = \frac{\partial v}{\partial z} + \frac{1}{r}\frac{\partial w}{\partial \theta} \qquad (5)$$

An axisymmetric problem exists when neither the geometry nor the surface loading are a function of the circumferential direction θ. This situation makes the circumferential displacement v zero and leaves the u and w displacements as functions of r and z only. In a general form, the displacements equations are

$$u = f(r,z), \qquad v = 0, \qquad w = g(r,z) \qquad (6)$$

Knowing that v =0 and that u and w do not vary with θ reduces the strain displacement equations (5) to

$$e_{rr} = \frac{\partial u}{\partial r} \qquad e_{r\theta} = 0$$

$$e_{\theta\theta} = \frac{u}{r} \qquad e_{rz} = \frac{\partial u}{\partial z} + \frac{\partial w}{\partial r}$$

$$e_{zz} = \frac{\partial w}{\partial z} \qquad e_{\theta z} = 0 \qquad (7)$$

There are four nonzero total strain components. The zero values for $e_{r\theta}$ and $e_{\theta z}$ imply that $\varepsilon_{r\theta} = \varepsilon_{rz} = 0$ and there are four nonzero elastic strain components. The strain vectors for axisymmetric elasticity are

$$\{ e \}^T = [e_{rr} \quad e_{\theta\theta} \quad e_{zz} \quad e_{rz} \ ] \qquad (8)$$

$$\{ \varepsilon \}^T = [\varepsilon_{rr} \quad \varepsilon_{\theta\theta} \quad \varepsilon_{zz} \quad \varepsilon_{rz} \ ] \qquad (9)$$

and

$$\{ \varepsilon_T \}^T = [\ \alpha\delta T \quad \alpha\delta T \quad \alpha\delta T \quad 0 \ ] \qquad (10)$$

Substitution of $\varepsilon_{r\theta} = \varepsilon_{\theta z} = 0$ into Hooke's law, $\{\sigma\} = [D] \{ e \}$ reveals that $\sigma_{r\theta} = \sigma_{\theta z} = 0$ and there are four nonzero stress components. The vector of stress components is

$$\{\sigma\}^T = [\sigma_{rr} \quad \sigma_{\theta\theta} \quad \sigma_{zz} \quad \sigma_{rz} \ ] \qquad (11)$$

The stress components are shown in Fig 11. The materials matrix [D] in Hooke's law reduces to

$$[D] = \frac{E}{1+\mu} \begin{bmatrix} d & b & b & 0 \\ b & d & b & 0 \\ b & b & d & 0 \\ 0 & 0 & 0 & \frac{1}{2} \end{bmatrix} \qquad (12)$$

where $d = \dfrac{1-\mu}{1-2\mu}$ and $b = \dfrac{\mu}{1-2\mu}$ [4]

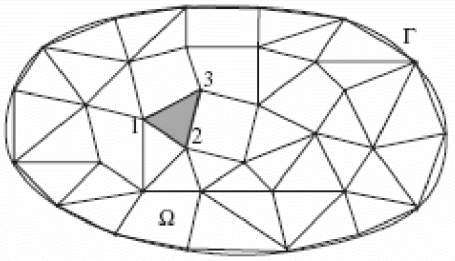
Temperature Distribution and Heat Transfer Problem in 2D

Element Equations: The general form of system equations of 2D linear steady state field problems can be given by the following general form of the Helmholtz equation:

$$D_x \frac{\partial^2 \phi}{\partial x^2} + D_y \frac{\partial^2 \varphi}{\partial y^2} - g\phi + Q = 0 \qquad (1)$$

Where ϕ is the field variable and D_x, D_y, g and Q are the given constants.

Let us assume that the problem domain is divided into elements, as shown below.



Division of problem domain Ω bounded by Γ into elements.

For one element in general, the residual can be obtained by the Galerkin method as

$$\mathrm{R}^{(e)} = -\int_{A_e} N^T \left(D_x \frac{\partial^2 \phi^h}{\partial x^2} + D_y \frac{\partial^2 \phi^h}{\partial y^2} - g\phi^h + Q \right) dA \qquad (2)$$

The minus sign is added to the residual mainly for convenience. The integration in equation (2) for the residual must be evaluated so as to obtain the element matrices, but in this case, the integration is much more complex so we will use the Gauss's divergence theorem.

Using the product rule for differentiation first, the following expression can be obtained:

$$\frac{\partial}{\partial x}\left(N^T \frac{\partial^2 \varphi}{\partial x^2}\right) = N^T \frac{\partial^2 \phi}{\partial x^2} + \frac{\partial N^T}{\partial x}\frac{\partial \phi}{\partial x} \tag{3}$$

The first integral in equation (2) can then be obtained by

$$-\int_{A_e} N^T D_x \frac{\partial^2 \phi}{\partial x^2} dA = -\int_{A_e} D_x \frac{\partial}{\partial x}\left(N^T \frac{\partial \phi}{\partial x}\right) dA + \int_{A_e} D_x \frac{\partial N^T}{\partial x}\frac{\partial \phi}{\partial x} dA \tag{4}$$

Where A_e is the area of the element. Gauss's divergence theorem can be stated mathematically for this case as

$$\int_{A_e} \frac{\partial}{\partial x}\left(N^T \frac{\partial \phi}{\partial x}\right) dA = \int_{\Gamma_e} N^T \frac{\partial \phi}{\partial x} \cos\theta d\Gamma \tag{5}$$

where θ is the angle of the outwards normal on the boundary Γ_e of the element with respect to the x-axis. Equation (5) is thus substituted into equation (4) to obtain

$$-\int_{A} N^T D_x \frac{\partial^2 \phi}{\partial x^2} dA = -\int_{\Gamma_e} D_x N^T \frac{\partial \phi}{\partial x} \cos\theta d\Gamma + \int_{A} D_x \frac{\partial N^T}{\partial x}\frac{\partial \phi}{\partial x} dA \tag{6}$$

In the similar way, the second integral in equation (2) can be evaluated to obtain

$$-\int_{A} N^T D_y \frac{\partial^2 \phi}{\partial y^2} dA = -\int_{\Gamma_e} D_y N^T \frac{\partial \phi}{\partial y} \sin\theta d\Gamma + \int_{A} D_y \frac{\partial N^T}{\partial y}\frac{\partial \phi}{\partial y} dA \tag{7}$$

The two integrals in equations (6) and (7) are substituted back into the residual in equation (2) to give

$$R^{(e)} = -\int_{\Gamma_e} N^T \left(D_x \frac{\partial \phi^h}{\partial x}\cos\theta + D_y \frac{\partial \phi^h}{\partial y}\sin\theta\right) d\Gamma$$

$$+ \int_{A_e} \left(D_x \frac{\partial N^T}{\partial x}\frac{\partial \phi^h}{\partial x} + D_y \frac{\partial N^T}{\partial y}\frac{\partial \phi^h}{\partial y}\right) dA$$

$$+\int_{A_e} gN^T\phi^h dA-\int_{A_e} QN^T dA \tag{8}$$

The field variable ϕ is now interpolated from the nodal variables by shape functions and is substituted into equation (8) to give

$$R^{(e)}=\underbrace{-\int_{\Gamma_e} N^T\left(D_x\frac{\partial\phi^h}{\partial x}\cos\theta+D_y\frac{\partial\phi^h}{\partial y}\sin\theta\right)d\Gamma}_{b^{(e)}}$$

$$+\underbrace{\left(\int_{A_e}\left(D_x\frac{\partial N^T}{\partial x}\frac{\partial N}{\partial x}+D_y\frac{\partial N^T}{\partial y}\frac{\partial N}{\partial y}\right)dA\right)\phi^{(e)}}_{k_D^{(e)}}$$

$$+\underbrace{\left(\int_{A_e} gN^T N dA\right)\phi^{(e)}}_{k_g^{(e)}}-\underbrace{\int_{A_e} QN^T dA}_{f_Q^{(e)}} \tag{9}$$

or in the matrix form,

$$\mathrm{R}^{(e)}=\mathrm{b}^{(e)}+\left[k_D^{(e)}+k_g^{(e)}\right]\phi^{(e)}-f_Q^{(e)} \tag{10}$$

where

$$\mathrm{b}^{(e)}=-\int_{\Gamma_e} N^T\left(D_x\frac{\partial\phi^h}{\partial x}\cos\theta+D_y\frac{\partial\phi^h}{\partial y}\sin\theta\right)d\Gamma \tag{11}$$

$$\mathrm{k}_D^{(e)}=\int_{A_e}\left(\frac{\partial N^T}{\partial x}D_x\frac{\partial N}{\partial x}+\frac{\partial N^T}{\partial y}D_y\frac{\partial N}{\partial y}\right)dA \tag{12}$$

$$\mathrm{k}_g^{(e)}=\int_{A_e} gN^T N dA \tag{13}$$

$$\mathrm{f}_Q^{(e)}=\int_{A_e} QN^T dA \tag{14}$$

The vector $\mathrm{b}^{(e)}$ is related to the derivatives of temperature (heat flux) on the boundaries of the element. The equations (12) and (14) are analyzed below.

The integral in equation (12) can be rewritten in the matrix form by defining

$$\mathrm{D} = \begin{bmatrix} D_x & 0 \\ 0 & D_y \end{bmatrix} \tag{15}$$

and the gradient vector as

$$\nabla\phi = \begin{Bmatrix} \dfrac{\partial\phi}{\partial x} \\ \dfrac{\partial\phi}{\partial y} \end{Bmatrix} = \begin{bmatrix} \dfrac{\partial N}{\partial x} \\ \dfrac{\partial N}{\partial y} \end{bmatrix} \phi^{(e)} = B\phi^{(e)} \tag{16}$$

where B is the strain matrix given by

$$\mathrm{B} = \begin{bmatrix} \dfrac{\partial N}{\partial x} \\ \dfrac{\partial N}{\partial y} \end{bmatrix} = \begin{bmatrix} \dfrac{\partial N_1}{\partial x} & \dfrac{\partial N_2}{\partial x} & \dfrac{\partial N_{n_d}}{\partial x} \\ \dfrac{\partial N_1}{\partial y} & \dfrac{\partial N_2}{\partial y} & \dfrac{\partial N_{n_d}}{\partial y} \end{bmatrix} \tag{17}$$

Where N is the shape function. Using the equations (15)-(17), it can be easily verified that

$$\mathrm{B}^T DB = D_x \frac{\partial N^T}{\partial x}\frac{\partial N}{\partial x} + D_y \frac{\partial N^T}{\partial y}\frac{\partial N}{\partial y} \tag{18}$$

Therefore, the general element 'stiffness' matrix for 2D elements given by equation (12) becomes

$$\mathrm{k}_D^{(e)} = \int_{A_e} B^T DBdA \tag{19}$$

this is exactly the same as obtained using Hamilton's principle, except that the matrix of material elasticity is replaced by the matrix of heat conductivity. Also the Galerkin weighted residual formulation produces the same set of FE equations as those produced by the energy principle.

CHAPTER IV

PROBABLISTIC ANALYSIS BY FIRST ORDER RELIABILITY METHOD.

The problem of reliability analysis of stochastic mechanical systems is of central importance in the safety assessment of structures. In a stochastic system, a large number of random variables influence the performance of the system listed in Table 2. The performance of the system is evaluated by a best estimate code. Consider a performance criterion Y of the system depending on the input variables X_1, X2, X3……..Xn. The function Y = g(X_1, X2, X3……..Xn) is a random variable to be determined.

In order to get the information about the uncertainty of Y, a number of finite element computations have to be performed. For each of these computational runs, all identified uncertain parameters are varied simultaneously.

According to the exploitation if the result of these studies, the uncertainty on the response can be evaluated either in the form of an uncertainty range, or in the form of a probability density function (pdf).

The uncertainty evaluation in the form of a pdf gives richer information than a confidence interval. Once the pdf of the system response is determined, the reliability can be directly obtained for a given failure criterion. However, the determination of this distribution can be expensive in computing time. We now present specific method usable for a direct evaluation of the reliability, without the need of defining the pdf of the system performance.

The performance function of a stochastic system according to a specified mission is given by:

M = performance criterion- given criterion limit = g(X_1, X2, X3……..Xn) in which the Xi (i = 1,….,n) are the n basic random variables (input parameters), with g( ) being now the functional relationship between the random variables and the failure of the system. The failure event is defined as the space where M < 0 and the success event is defined as the space M > 0. Thus a probability of failure can be evaluated by the following integral:

$$P_f = \iint....\int f_x(x1,....xn)dx1....dxn \qquad (1)$$

where f_x is the joint density function of x1,x2,x3….xn. and the integration is performed over the region where M < 0. because each of the basic random variables has a unique distribution and they interact, the integral (1) cannot be easily evaluated.

The first and second order reliability methods consist of 3 steps:

1) The transformation of the space of the basic random variables X1, X2 …,Xn into a space of standard normal variables.

2) The research, in this transformed space, of the point of minimum distance from the origin on the limit state surface (design point)

3) An approximation of the failure surface near the design point.

First Order reliability method consists in approaching the surface of failure by a hyper plane tangent to the failure surface at the design point. Then an estimate of the failure probability is obtained by:

$$P_f = \phi(-\beta)$$

where ϕ is the cumulative Gaussian distribution of the standard normal law. β the reliability index according to Hasofer and Lind. The precision of this approximation depends on the non-linearity of the failure surface.

The FORM methods are approximate methods, but their accuracy is generally good for small probabilities. [5]

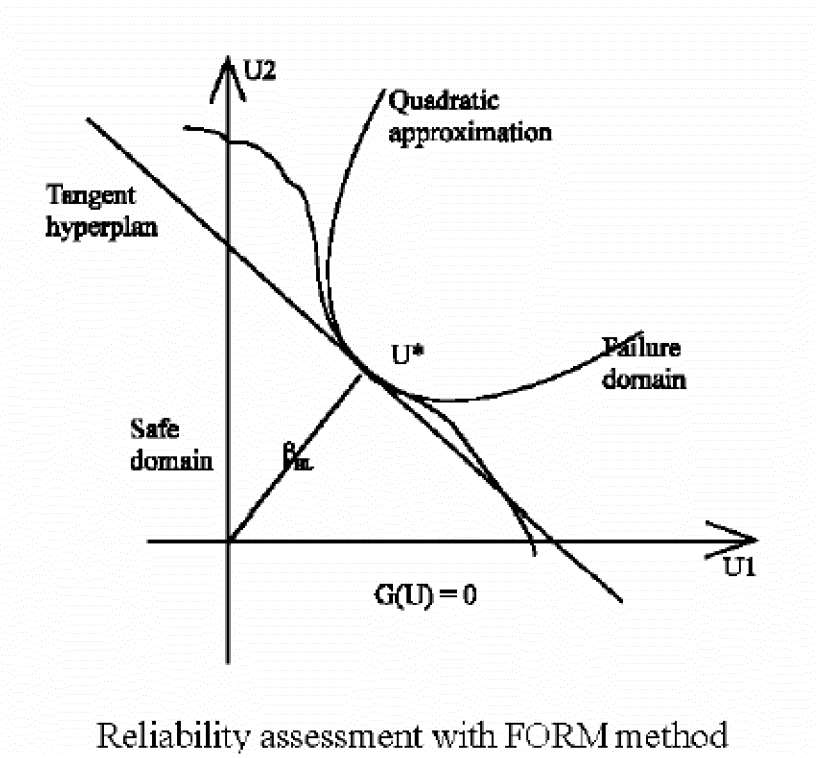


Fig 13. Reliability assessment with FORM.

NESSUS: The NESSUS analysis computer program combines probabilistic algorithms with structural analysis to compute the response and reliability of engineering systems. The material properties, boundary conditions and initial conditions can be simulated. Several algorithms are available such as the advanced mean value method and the adaptive importance sampling method. The application of the code includes probabilistic structural response, component and system reliability considering the cost of failure. Advanced probabilistic algorithms combine with the analysis model to determine the cumulative distribution function (CDF) of a structural response. NESSUS provides the capability of user flexibility in defining the model to be analyzed. It has a combination of a self-contained finite element module and user written subroutines. The user can define

the structural reliability performance using, the finite element model, a damage model, material strength and other numerical routines. The finite element method implemented in NESSUS contains several unique methods for efficient sensitivity analysis. It contains a flexible interface for defining the structural random variables. The user can define geometric, loading, material properties and boundary conditions of any part of the structure as random variables. We have used NESSUM with Fast Probability Integration (FPI) module. This module performs the probability calculations and contains a number of advanced methods in order to compute accurate results quickly. FPI contains FORM/SORM, convolution, advanced first order, Monte Carlo, importance sampling and advanced Mean Value solution methods.[6]

STRUCTURAL/ THERMAL ANALYSIS OF HOSE

- The layers of the Hose were modeled using CATIA V5 according to the drawings and specification provided.
- The 3 D model was imported to Finite element analysis software ANSYS 11.0 Workbench to analyze under structural and thermal conditions using IGES.
- The structural and thermal boundary conditions were assumed.
- The temperature distribution, heat flux and thermal stresses were monitored in different layers.
- A separate structural analysis was carried out to check the Von misses stresses due to internal pressure of 150Psi.
- The temperature distribution in the layers was further saved and provided as input for getting the thermal stresses.

Probability Analysis using NESSUS/ANSYS 11.0

- A 2D assembly of the Hose was modeled for getting the stresses and the area of maximum stress concentration.
- The model was imported into ANSYS 11.0 and material and thermal properties were given as initial conditions.
- The results obtained were saved and 40 random variables were varied by 10% to get the maximum stresses in different situations.
- These stresses were given as input in the NESSUS probability software for finding the impact of design parameters to the output response which in our case is the maximum stress.

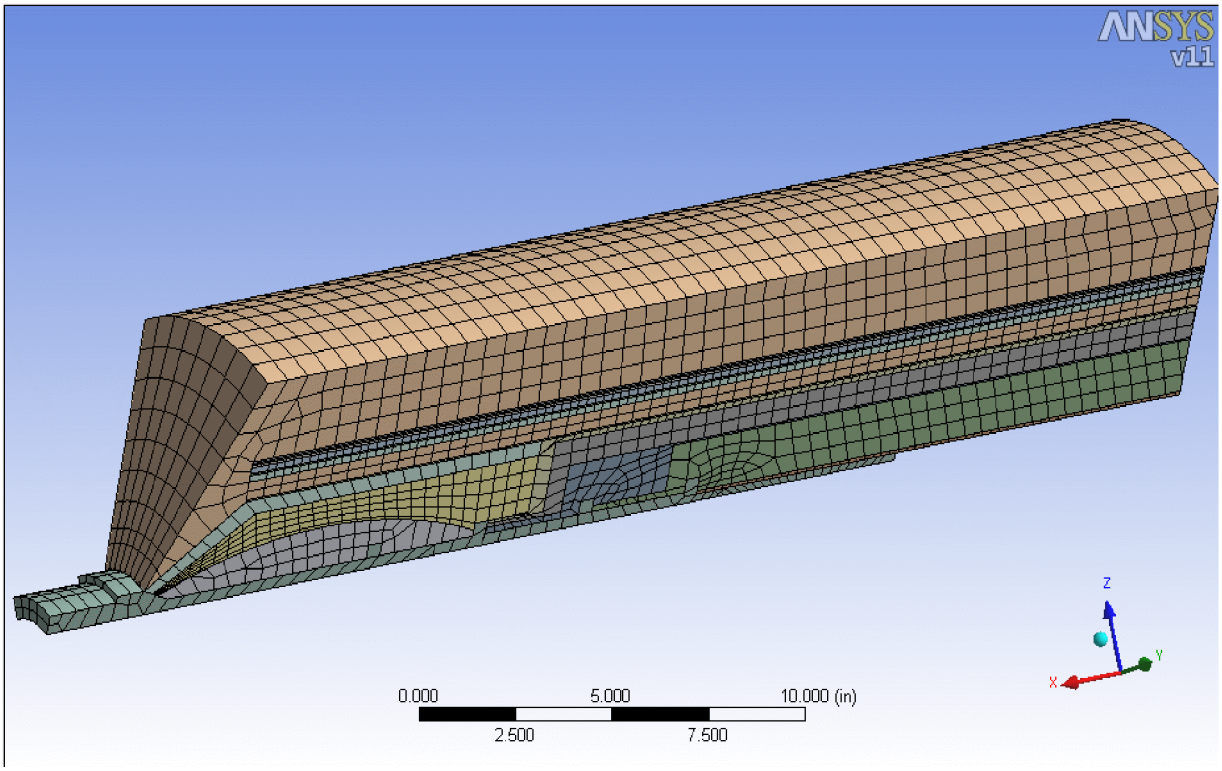


Fig 14: Meshed model of the Hose showing different layers.

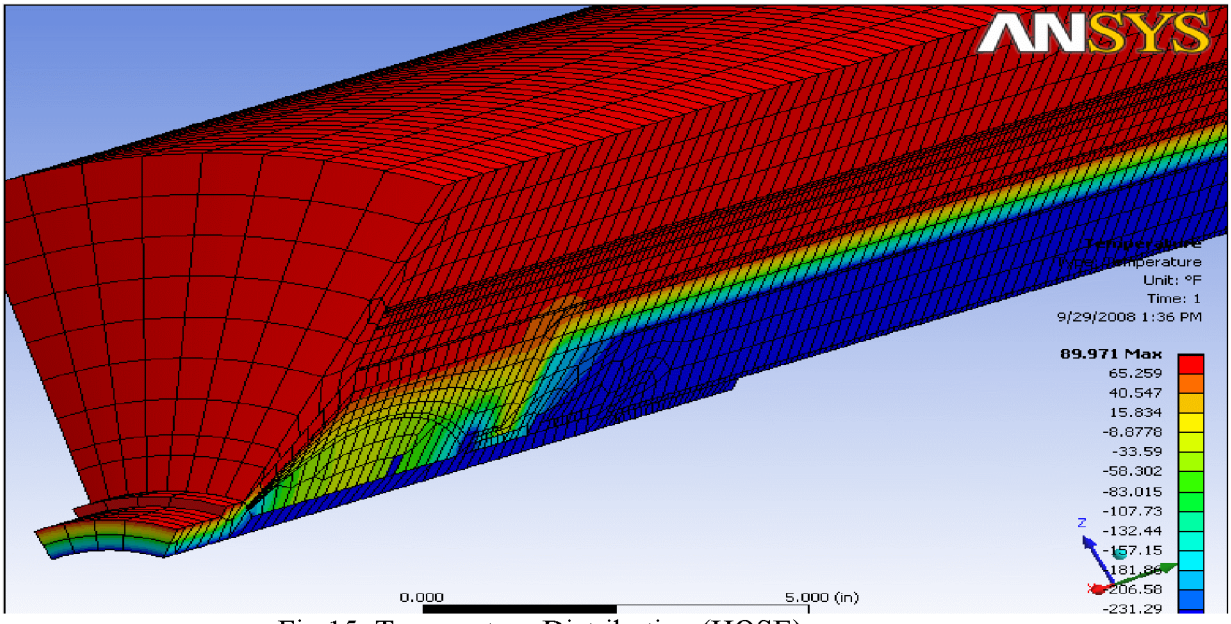


Fig 15: Temperature Distribution (HOSE)

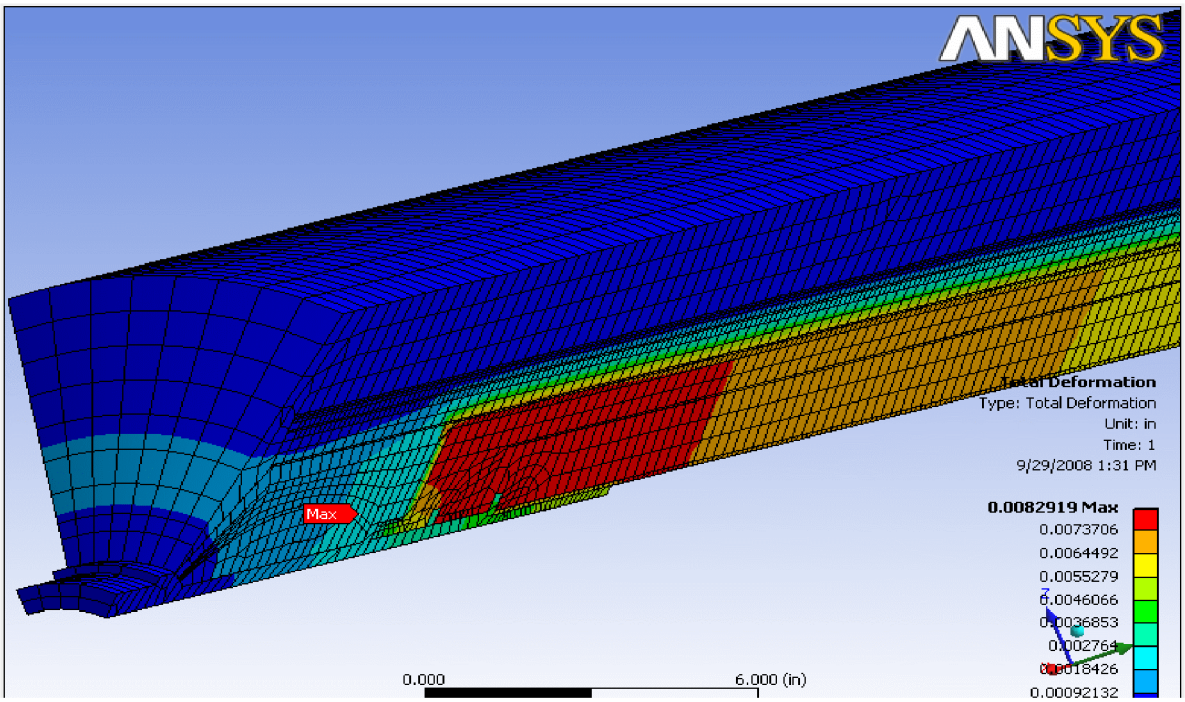


Fig 16: Total Deformation (HOSE)

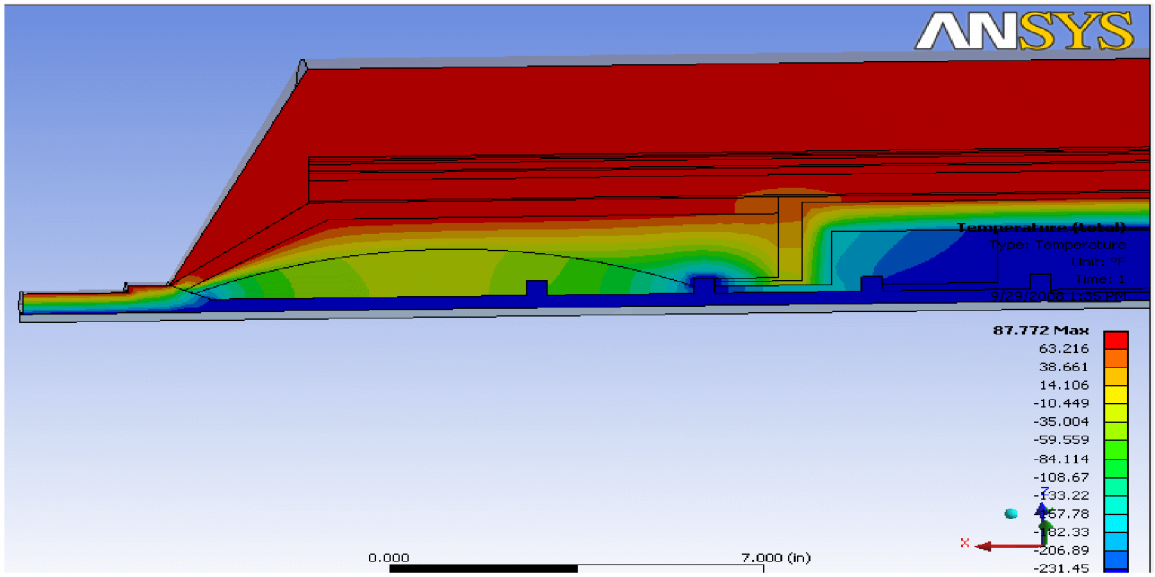


Fig 17: Total Temperature Distribution (HOSE)

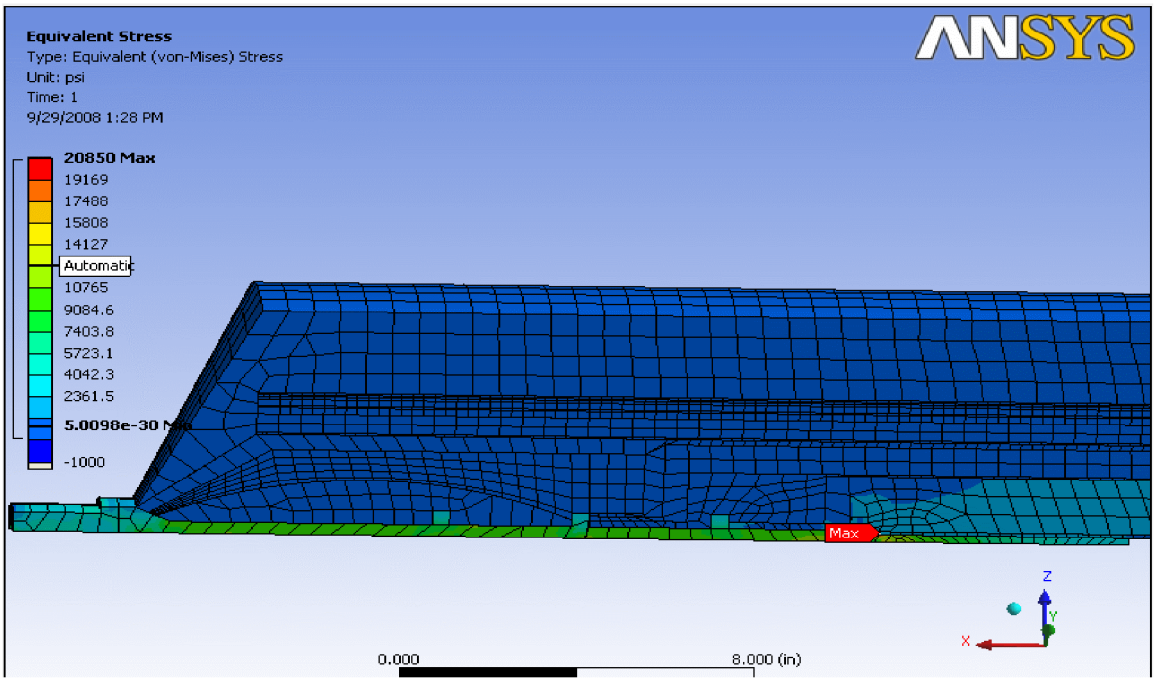


Fig 18: Maximum Stress

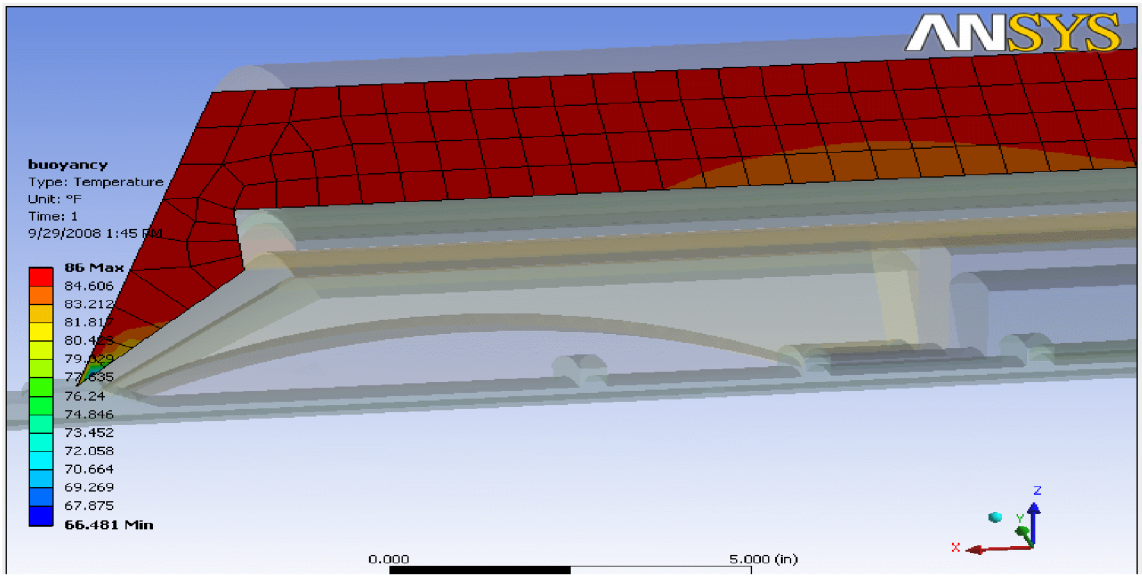


Fig 19: Temperature Distribution in Buoyancy layer.

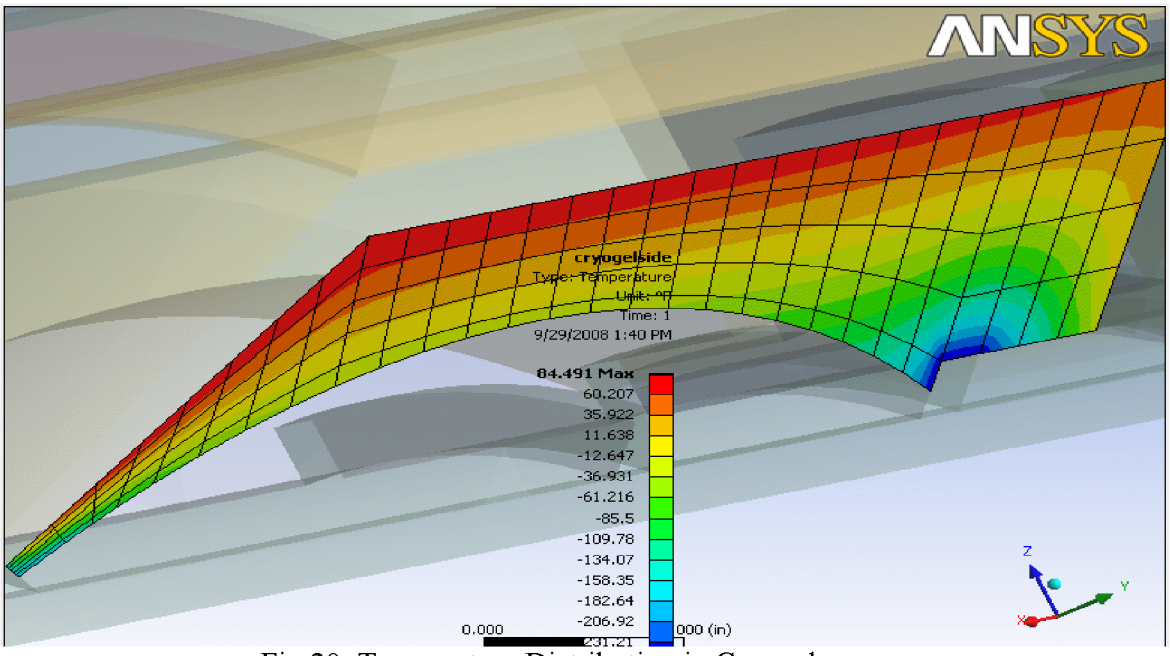


Fig 20: Temperature Distribution in Cryogel

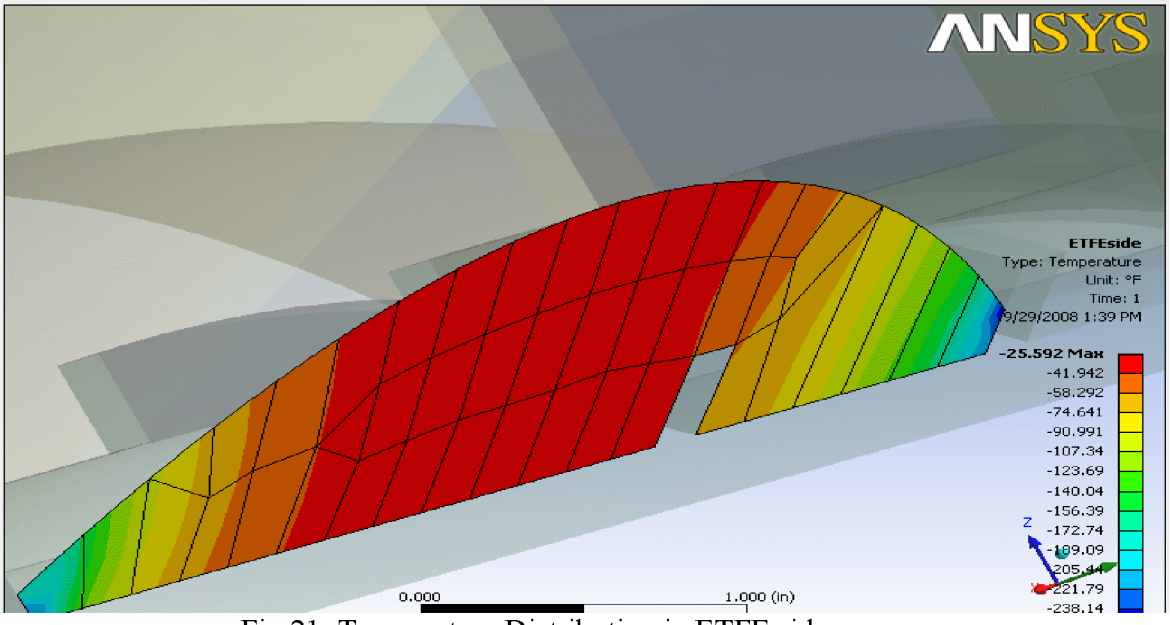


Fig 21: Temperature Distribution in ETFE side.

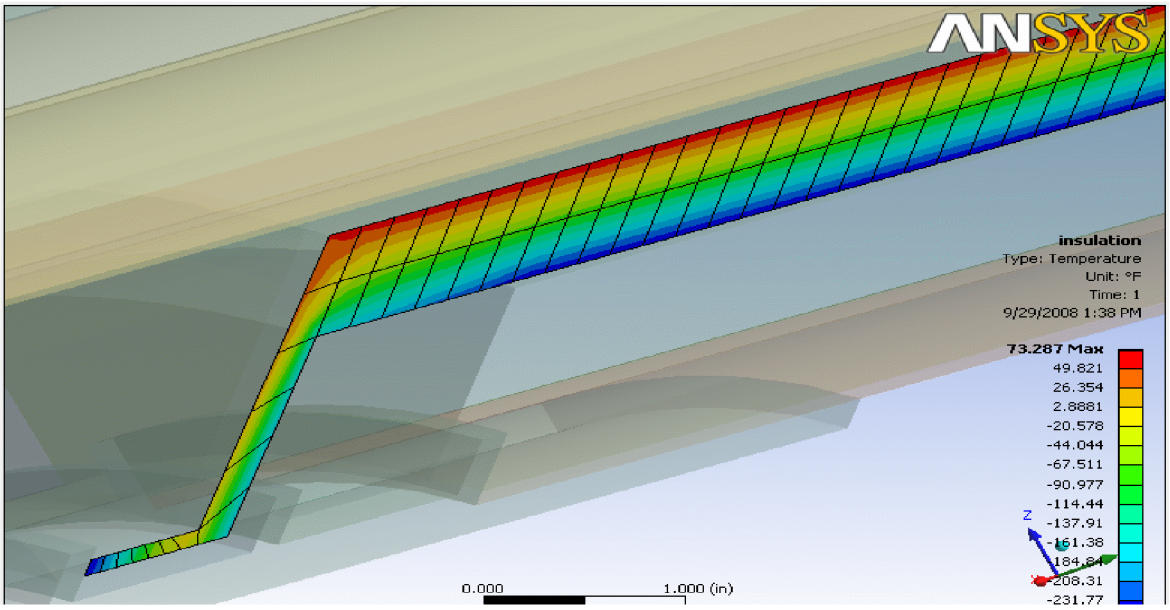


Fig 22: Temperature Distribution in Insulation layer.

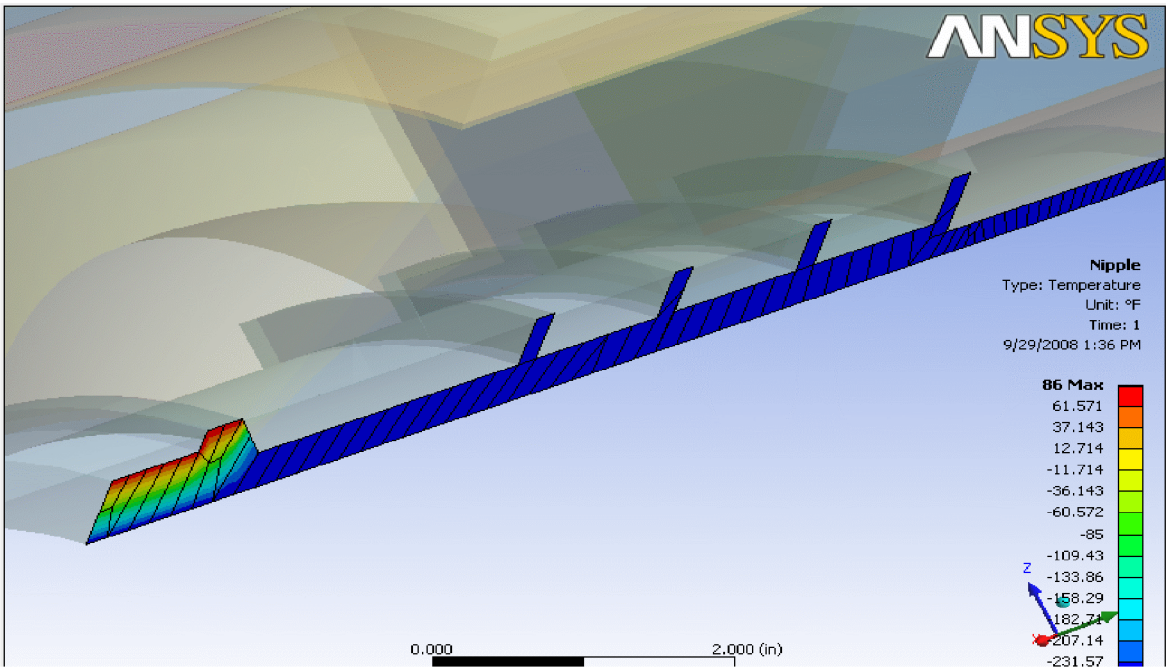


Fig 23: Temperature Distribution in Nipple.

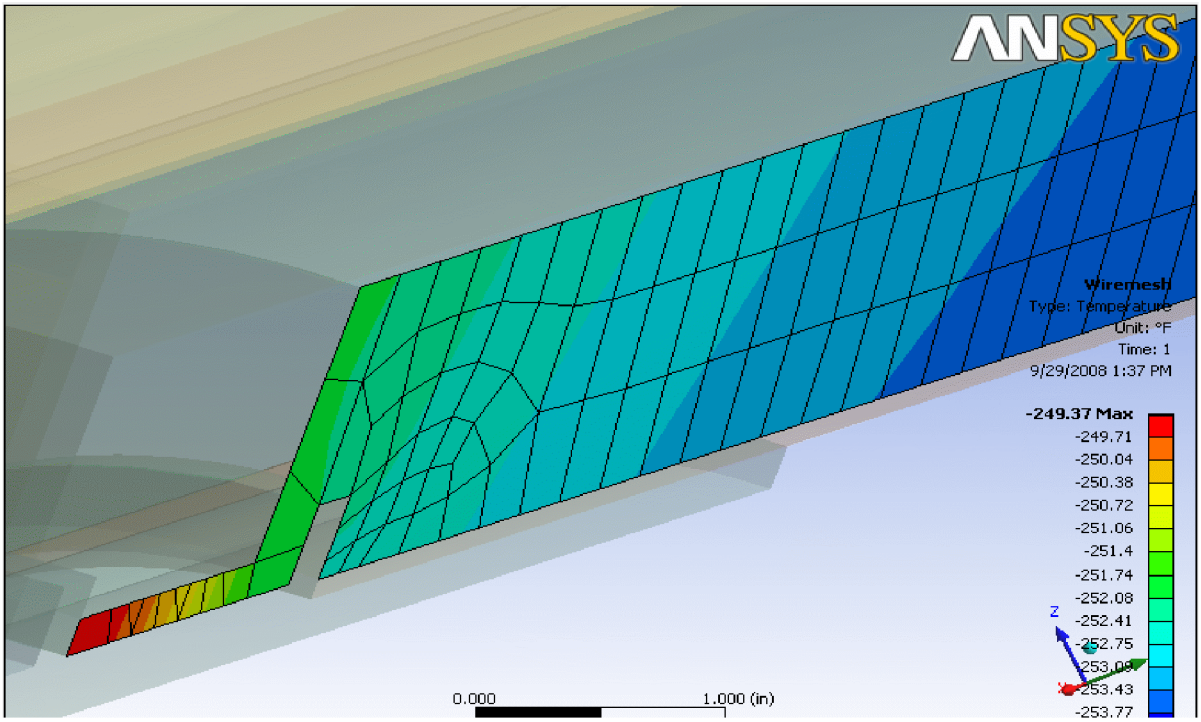


Fig 24: Temperature Distribution in Wire mesh.

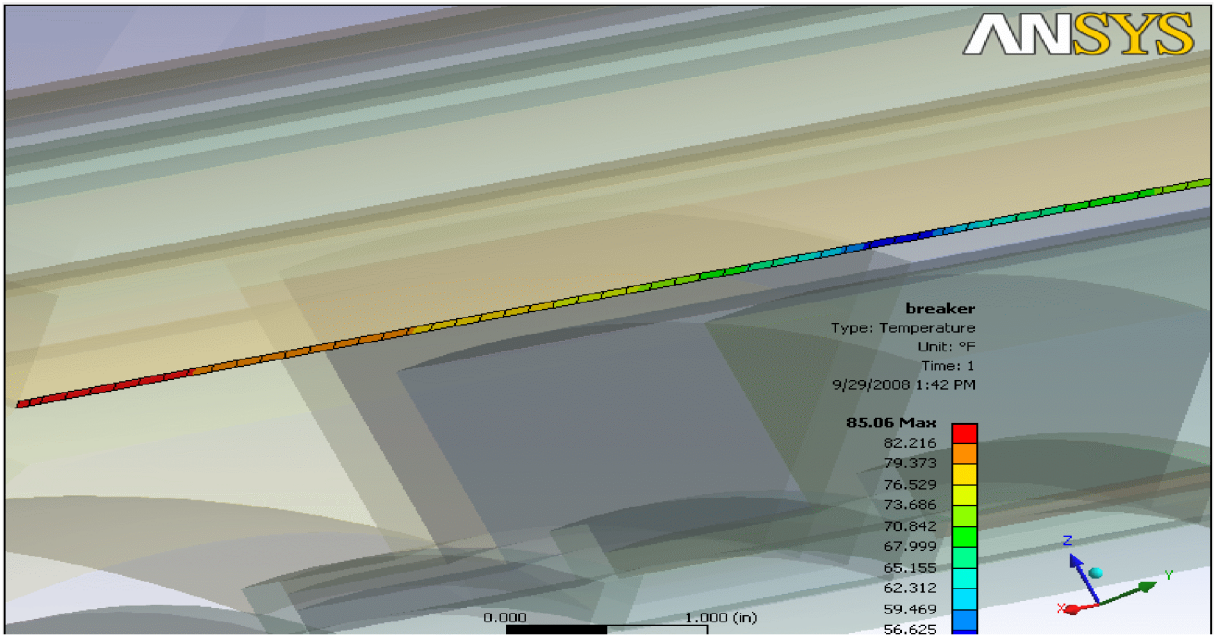


Fig 25: Temperature Distribution in Breaker.

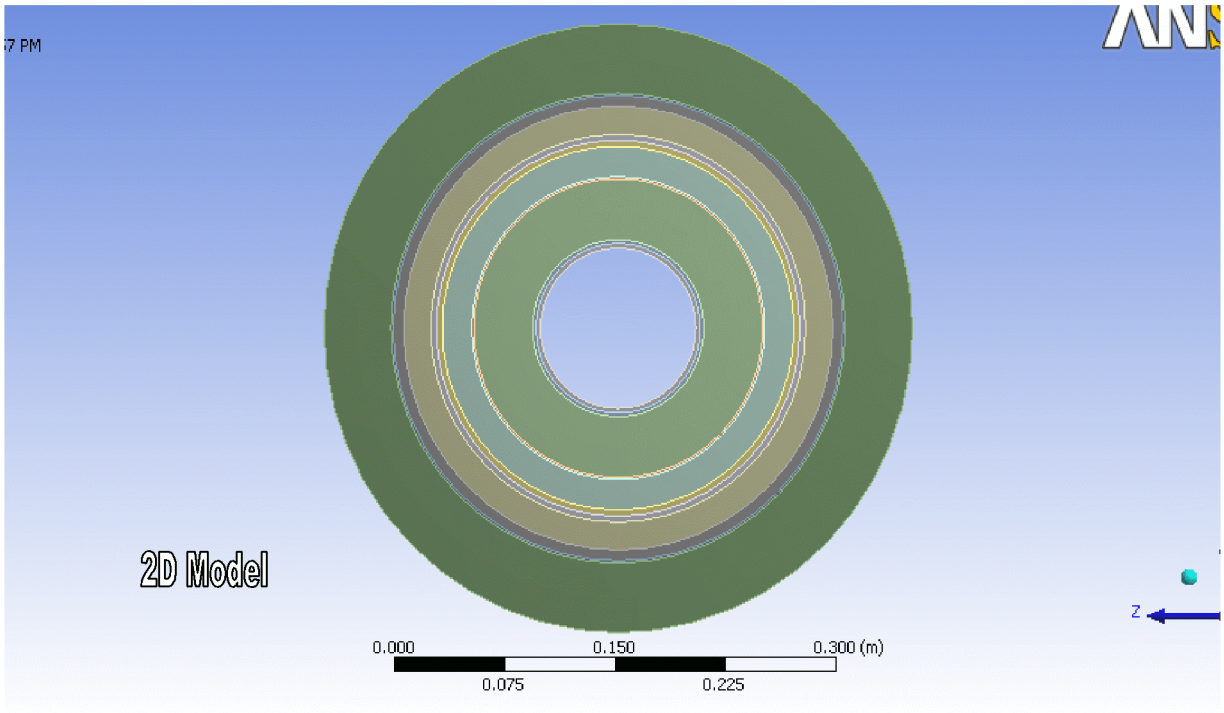


Fig 26: 2D Model of the Hose.

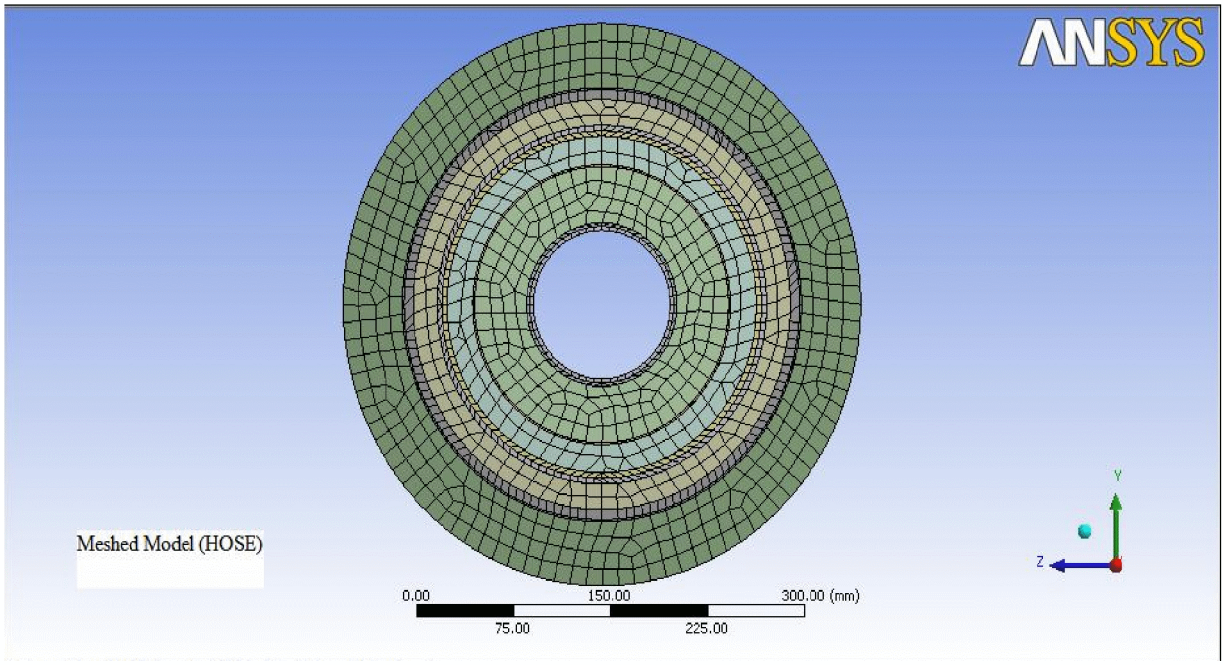


Fig 27: Meshed Model for Hose.

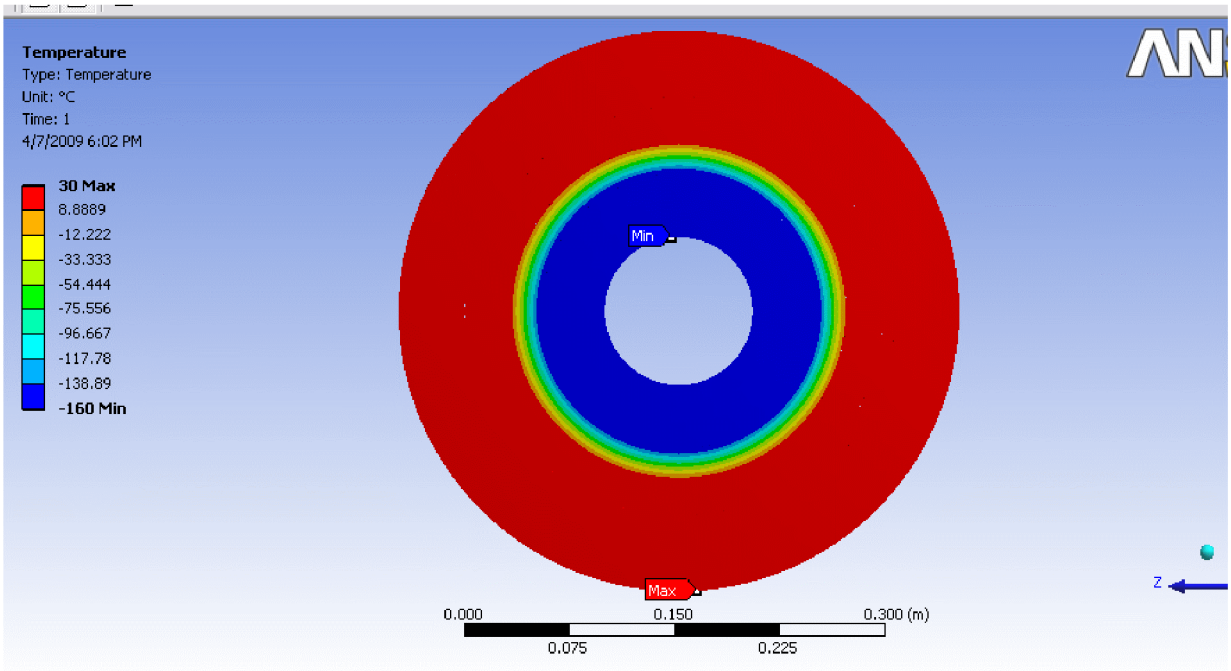


Fig 28: Temperature Distribution

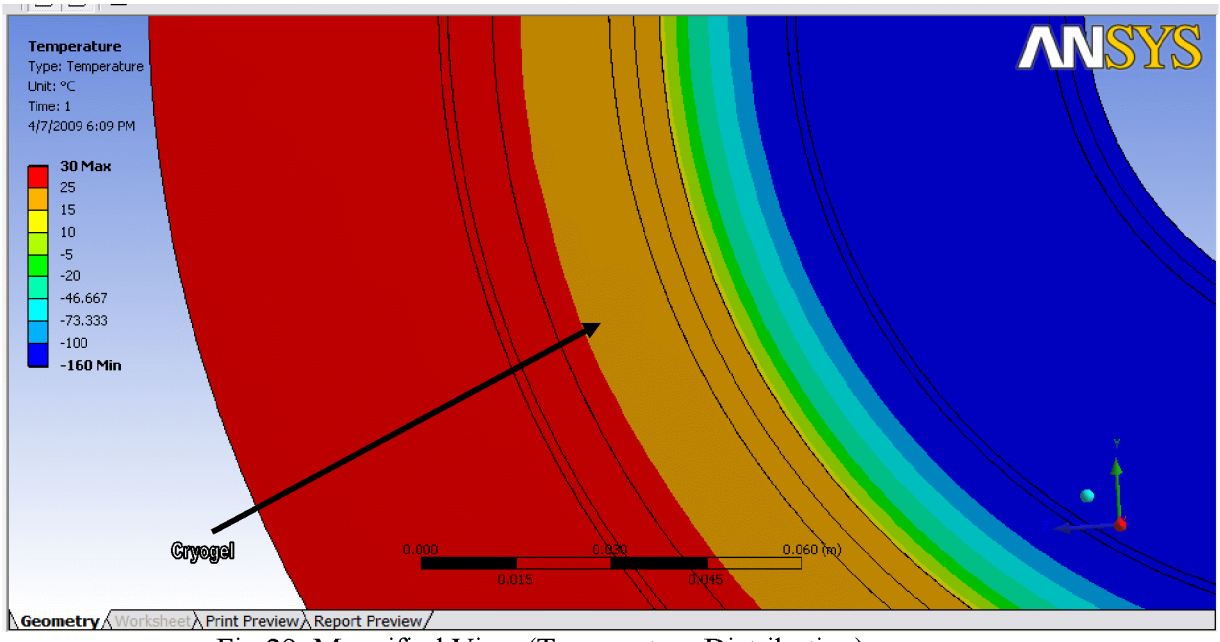


Fig 29: Magnified View (Temperature Distribution)

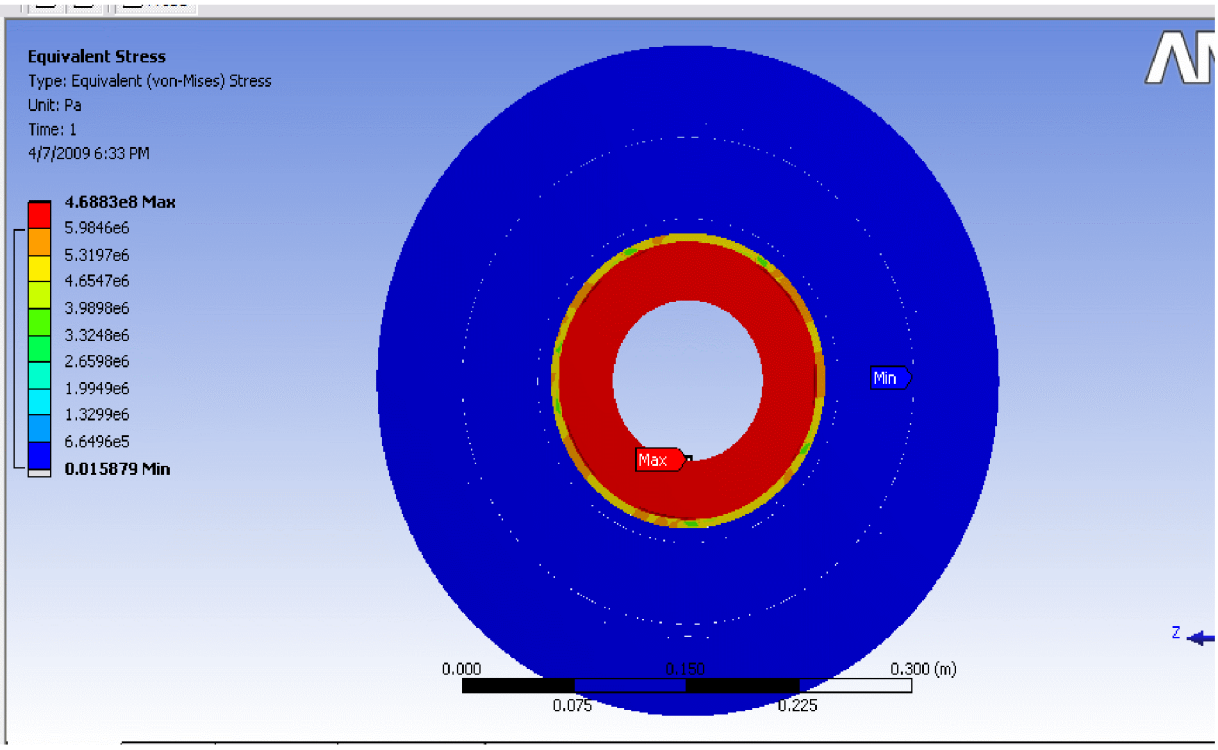


Fig 30: Equivalent Thermal stress.

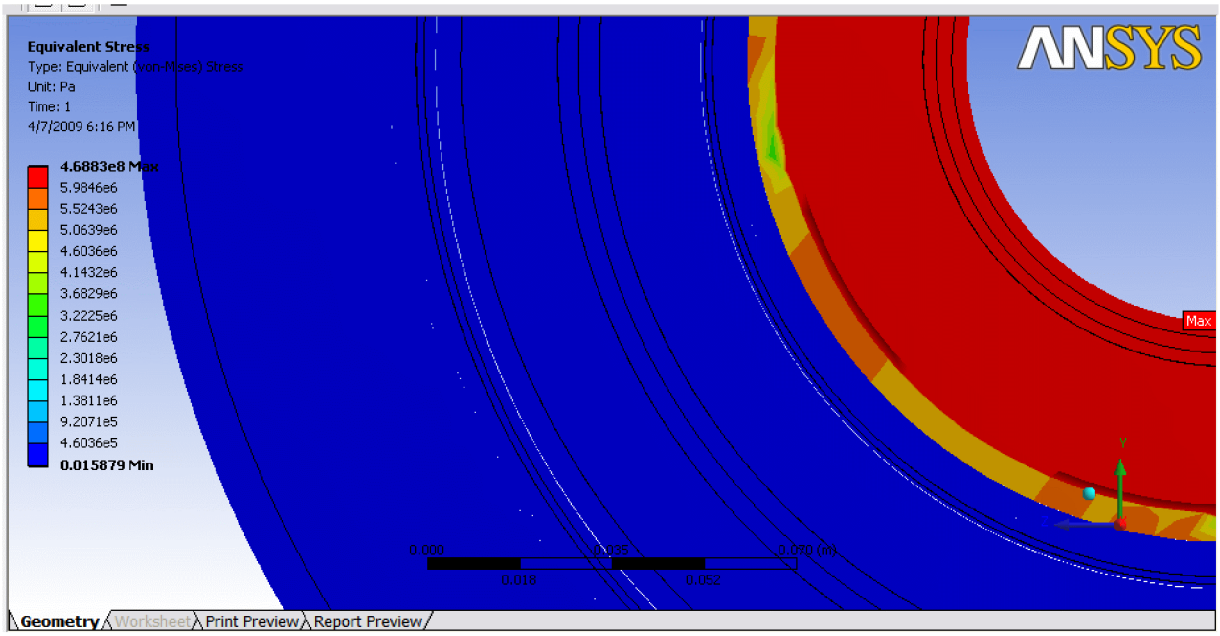


Fig 31: Magnified View(Maximum Stress)

CHAPTER V

RESULTS AND DISCUSSION

The deterministic and probabilistic analyses were discussed in Chapter IV. The distribution of temperature and stresses in various layers of the hose is shown in Figures 14-25. A probabilistic analysis was performed by using the code NESSUS and the results are shown in Figures 26-29. Bar Graphs showing the effect of various design parameters on the sensitivity factors are shown in Figures 30 to 36. All random variables were assumed to be independent and normal distribution was assumed for all random variable scatters which were ± 10%.

Maximum temperature location and maximum stress locations in the layers are identified. A finite element code ANSYS was used to couple the thermal profiles with structural design and locate the critical location where maximum stress existed. 40 different random variables were varied to find the effect on maximum stresses.

Cumulative distribution function (CDF) and the sensitivity factors were computed based on First order reliability method (FORM) through NESSUS. Cumulative distribution function for maximum stress is shown in figure 30.

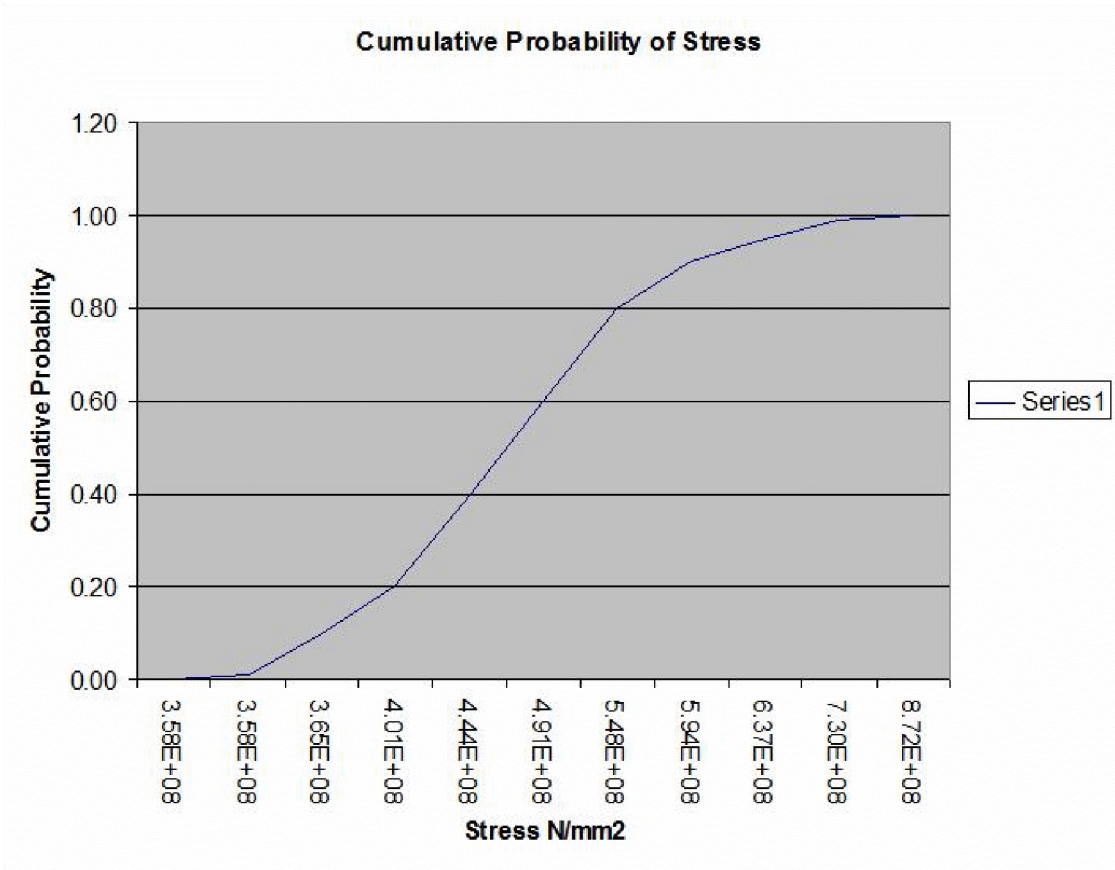


Fig 32: CDF for maximum stress

The sensitivity factors give a clear idea of the effects caused on maximum stresses. This in turn helps in choosing the right material and correct geometrical dimensions for the layers. The various random variables are shown in table 2. From sensitivity factors vs. the random variables graph, for various probabilities, we find that inside temperature, pressure, Young's modulus and thermal expansion coefficient for layers

1and 2, thermal expansion coefficient for layer 6, thickness of layer 6 and outside heat transfer coefficient have significant effects on maximum stress.

Random Variable		Units
Inside temperature	T0	Celsius
Inside Pressure	P0	Pa
Inside Heat Transfer Coefficient	h0	W/m2 C
Inside Diamter	Di	m
1st Layer Youngs Modulus	E1	Pa
1st Layer Thermal Expansion	α1	1/C
1st Layer Poissons ratio	ν1	.....
1st Layer Thickness	t1	m
1st Layer Thermal conductivity.	k1	W/m.C
2nd Layer Youngs Modulus	E2	Pa
2nd Layer Thermal Expansion	α2	1/C
2nd Layer Poissons ratio	ν2	.....
2nd Layer Thickness	t2	m
2nd Layer Thermal conductivity.	k2	W/m.C
3rd Layer Youngs Modulus	E3	Pa
3rd Layer Thermal Expansion	α3	1/C
3rd Layer Poissons ratio	ν3	.....
3rd Layer Thickness	t3	m
3rd Layer Thermal conductivity.	k3	W/m.C
4th Layer Youngs Modulus	E4	Pa
4th Layer Thermal Expansion	α4	1/C
4th Layer Poissons ratio	ν4	.....
4th Layer Thickness	t4	m
4th Layer Thermal conductivity.	k4	W/m.C
5th Layer Youngs Modulus	E5	Pa
5th Layer Thermal Expansion	α5	1/C
5th Layer Poissons ratio	ν5	.....
5th Layer Thickness	t5	m
5th Layer Thermal conductivity.	k5	W/m.C
6th Layer Youngs Modulus	E6	Pa
6th Layer Thermal Expansion	α6	1/C
6th Layer Poissons ratio	ν6	.....
6th Layer Thickness	t6	m
6th Layer Thermal conductivity.	k6	W/m.C
7th Layer Youngs Modulus	E7	Pa
7th Layer Thermal Expansion	α7	1/C
7th Layer Poissons ratio	ν7	.....
7th Layer Thickness	t7	m
7th Layer Thermal conductivity.	k7	W/m.C
Outside temperature	Tinf	Celsius
Outside Heat Transfer Coefficient	hinf	W/m2 C

Table: 2 Random variables.

The maximum stress for the assembly was in the contact area of Nipple and wire mesh. Cryogel layer shows maximum reduction of temperature across the layers. The outer carcass or the buoyancy layer is used as an insulation material. Analyzing the stress helps in improving the existing design as it gives a clear picture about the performance of the assembly in real environment.

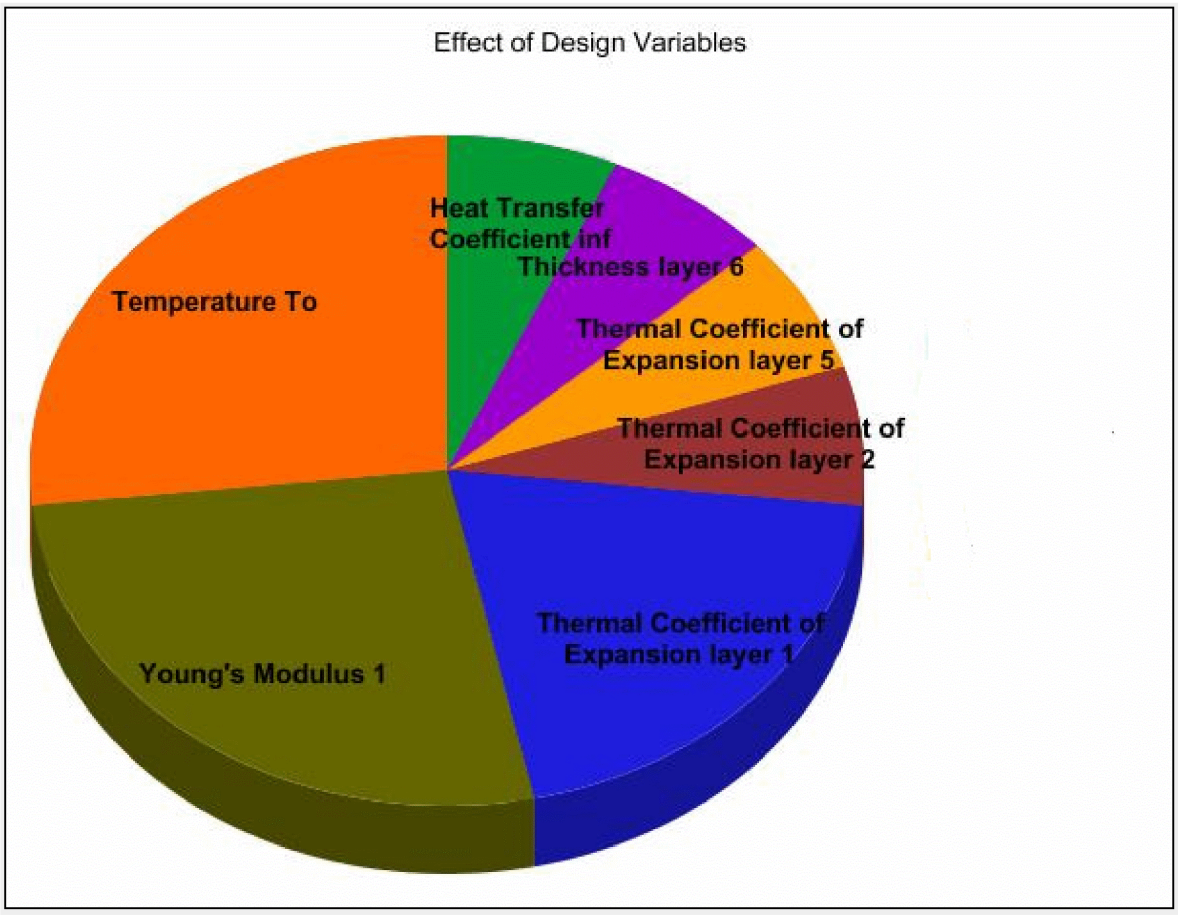


Fig 33: Effect of Design Variables.

Above Figure shows the effect of design variables on the output stresses.

CHAPTER VI

CONCLUDING REMARKS

In this present work, a non deterministic method has been developed to support the reliability based design. An LNG hose was computationally simulated and probabilistically evaluated in view of the several uncertainties in the fluid, structural, material and thermal variables that govern the LNG hose. A finite element code ANSYS was used to couple the thermal profiles with structural design. The stresses and their variations were evaluated at critical points on the hose. Cumulative distribution functions and sensitivity factors were computed for stress responses due to fluid, mechanical and thermal random variable. These results can be applied to quickly identify the most critical design variables in order to optimize the design and make it cost effective.

Area of maximum stress was located on the hose deterministically and then the 40 different random variables were varied by $\mp$ 10% of the mean values to check the effect on the maximum stress.

Figures 33-39 shows the graphs of sensitivity factors Vs the random variables for various probability levels.

The above pie diagram shows the significant effects of 7 random variables on the maximum stress. The variables are Outer Temperature T_0, Young's modulus layer 1, Outer Heat transfer coefficient, Thickness for layer 6 and Thermal coefficient of expansion for layers 5, 2 and 1. Also it can be noted from the figure that Outer Temperature T_0, Young's modulus and Thermal coefficient of expansion for layer 1 has more effect than other random variables. Slight alteration in these parameters will have significant impact on the maximum stress. This analysis helps the designer to choose the right material/geometric properties for the design. From figure 17 and 29 we can observe that cryogel layer is responsible for significant temperature change in the hose.

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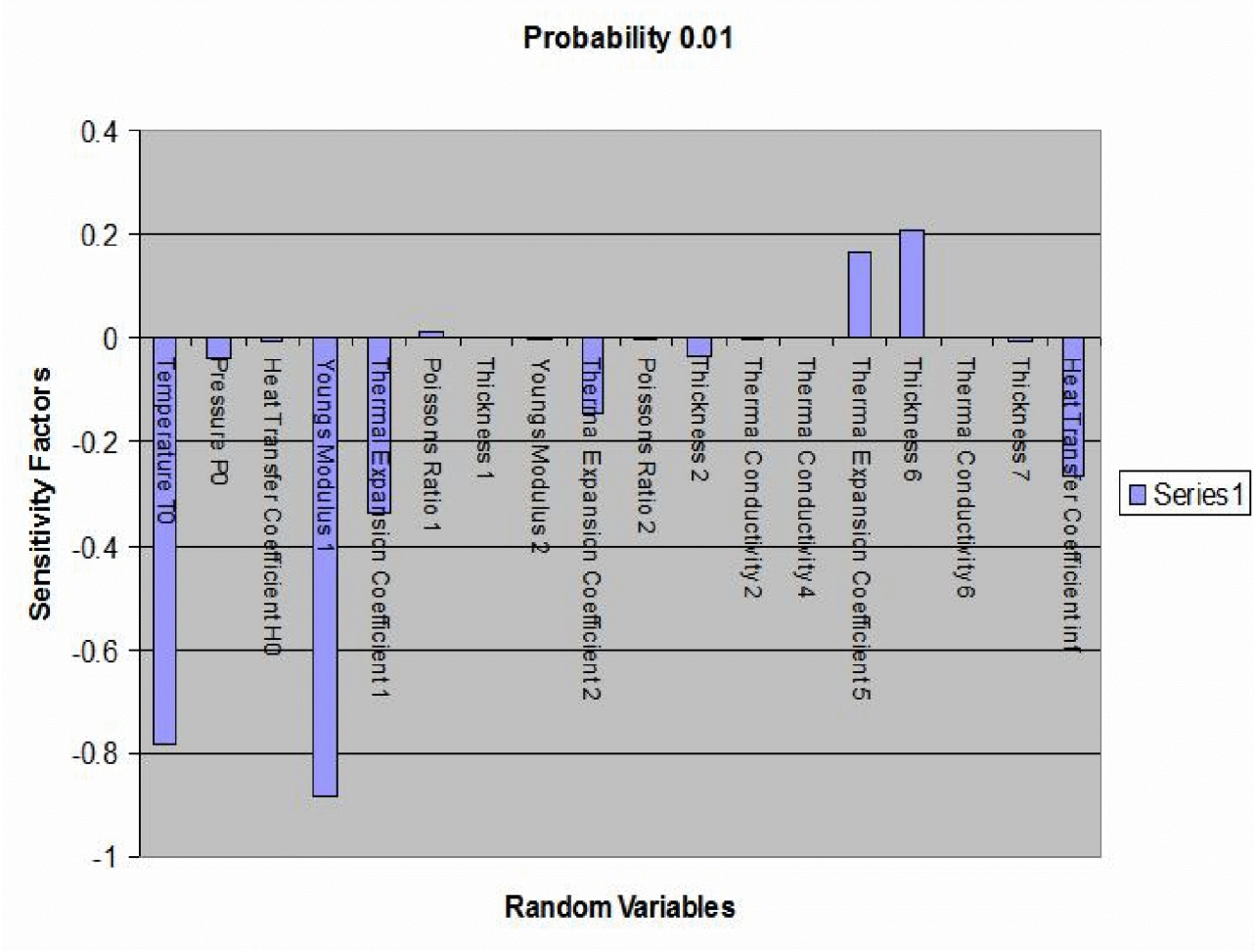

Figure 34: Probability 0.01 Random Variables Vs Sensitivity Factors

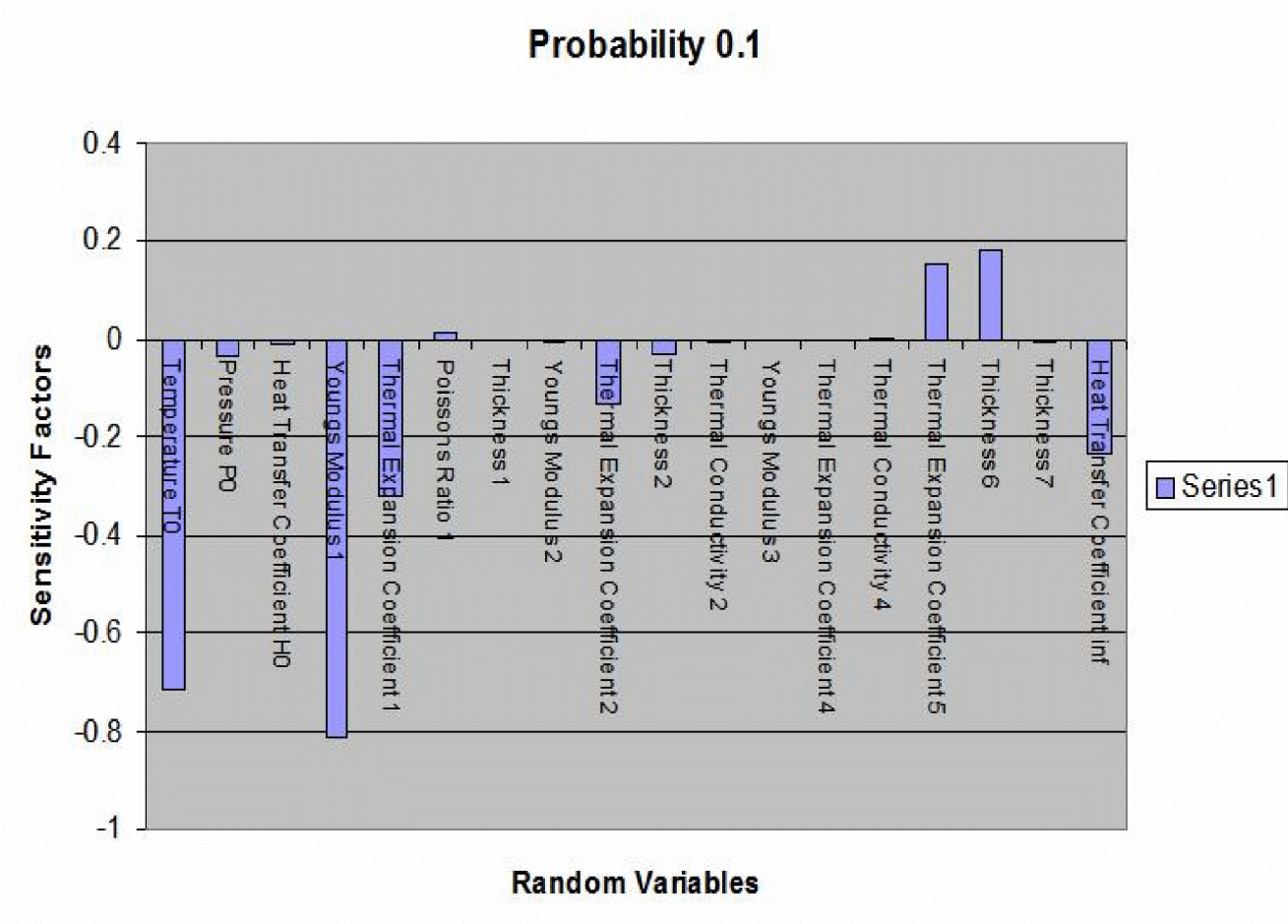

Figure 35: Probability 0.1 Random Variables Vs Sensitivity Factors

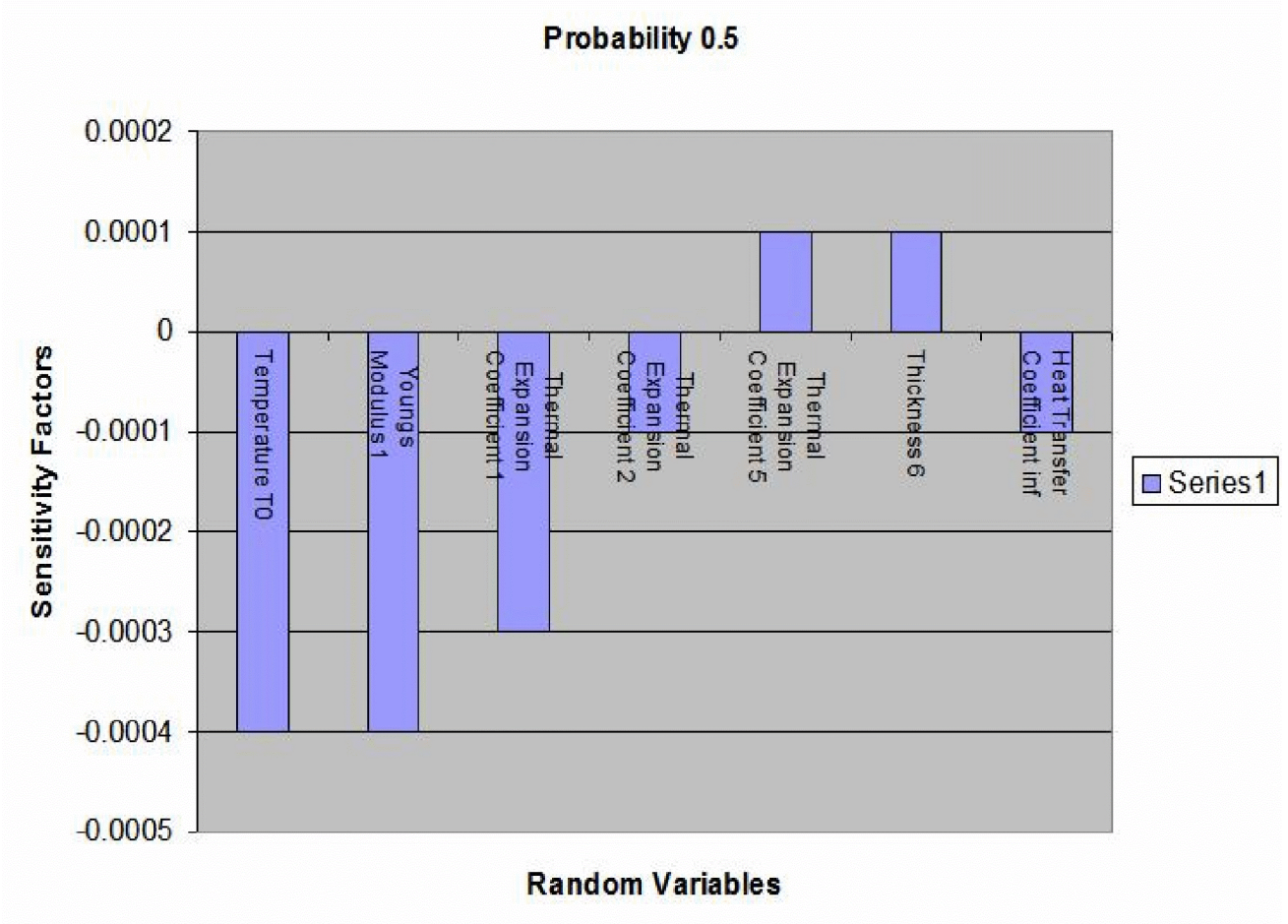

Figure 36: Probability 0.5 Random Variables Vs Sensitivity Factors

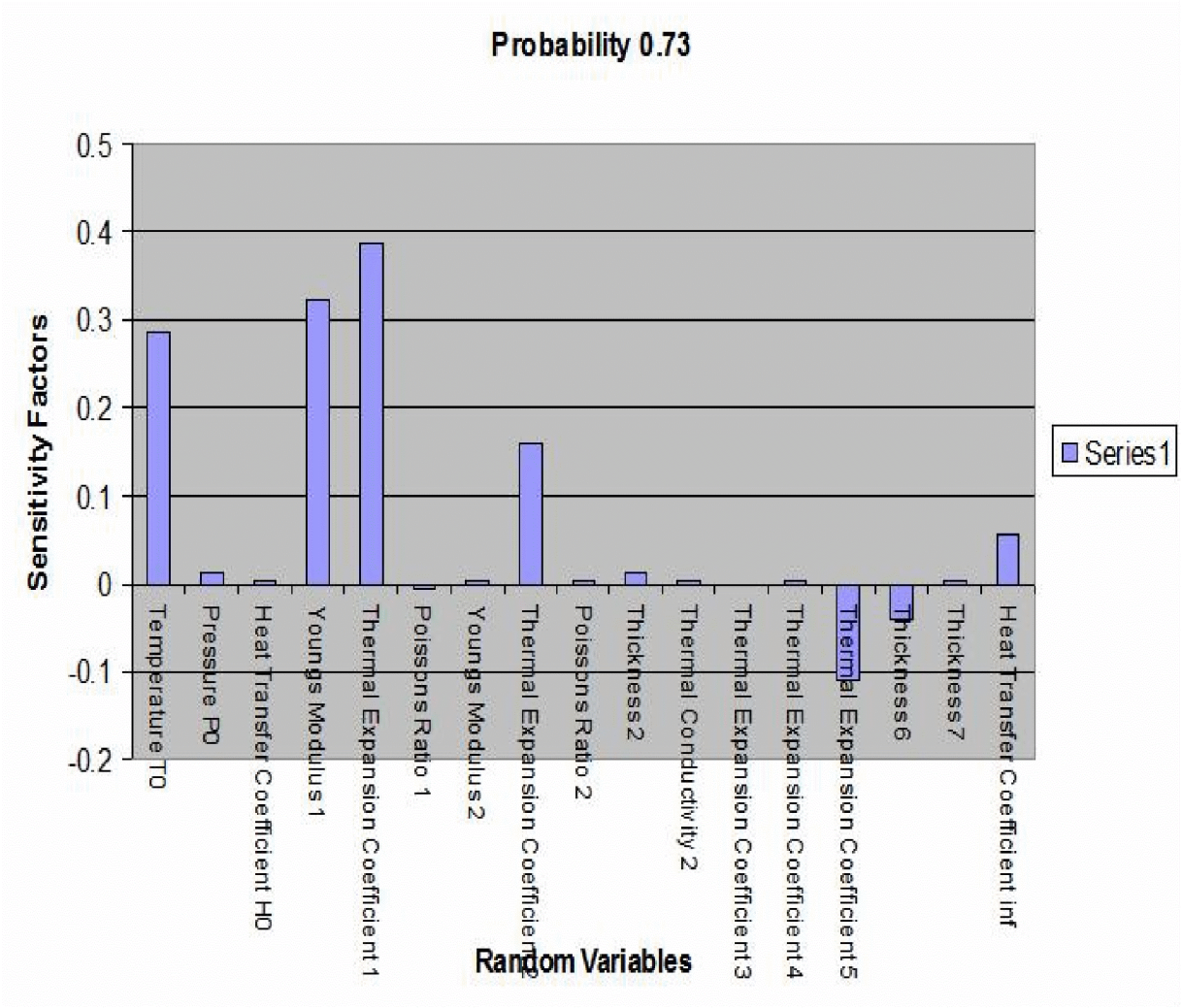

Figure 37: Probability 0.73 Random Variables Vs Sensitivity Factors

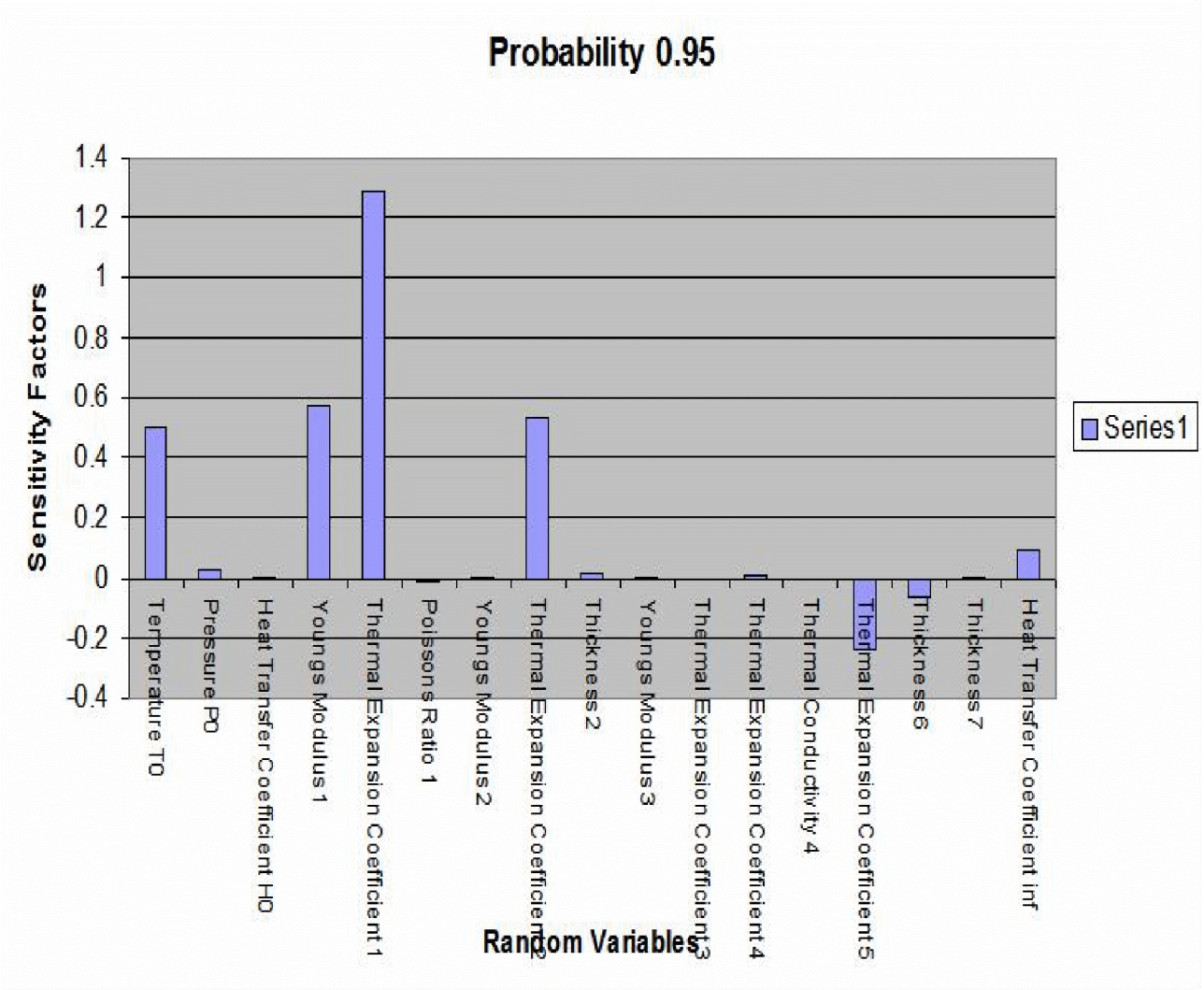

Figure 38: Probability 0.95 Random Variables Vs Sensitivity Factors

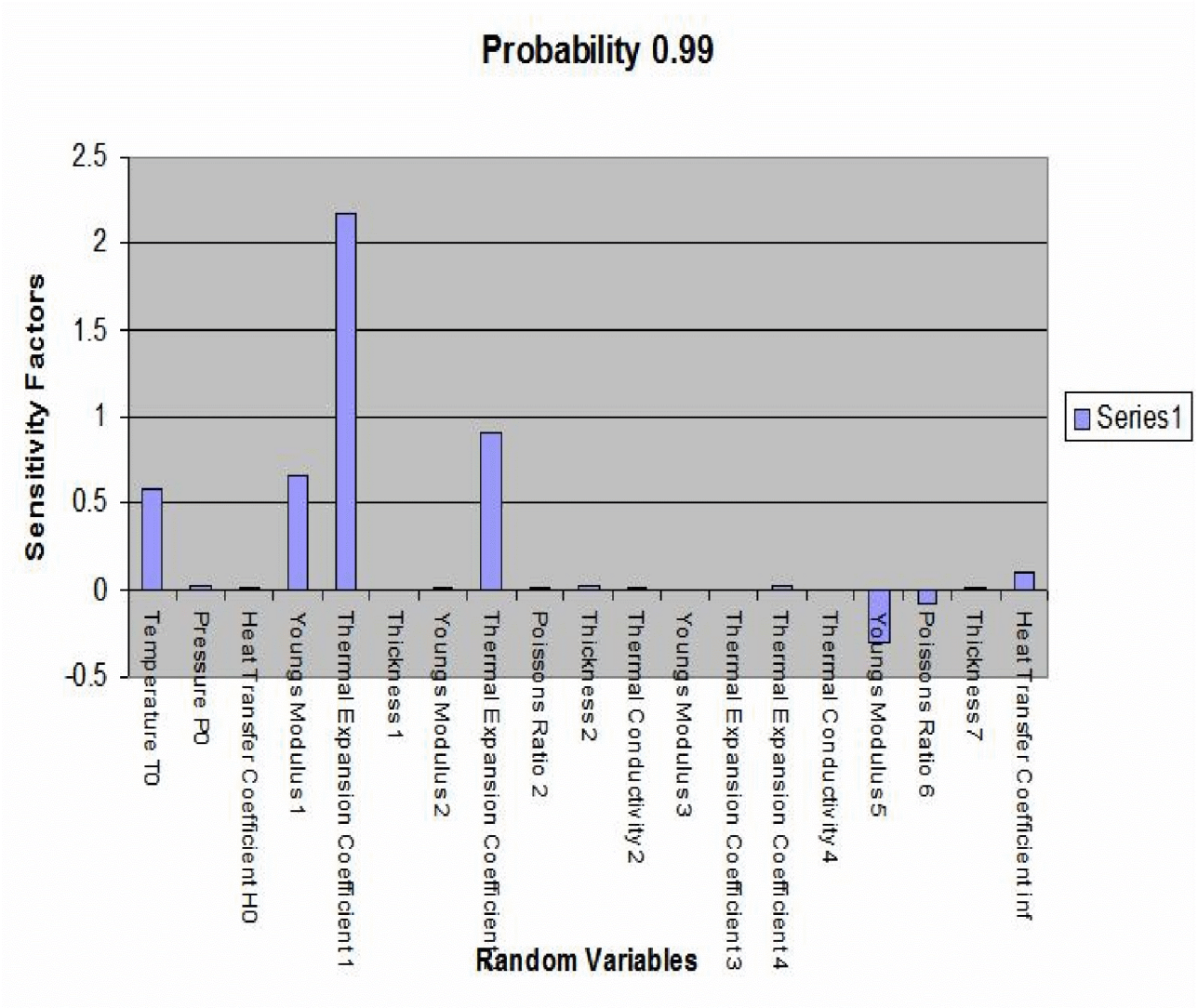

Figure 39: Probability 0.99 Random Variables Vs Sensitivity Factors

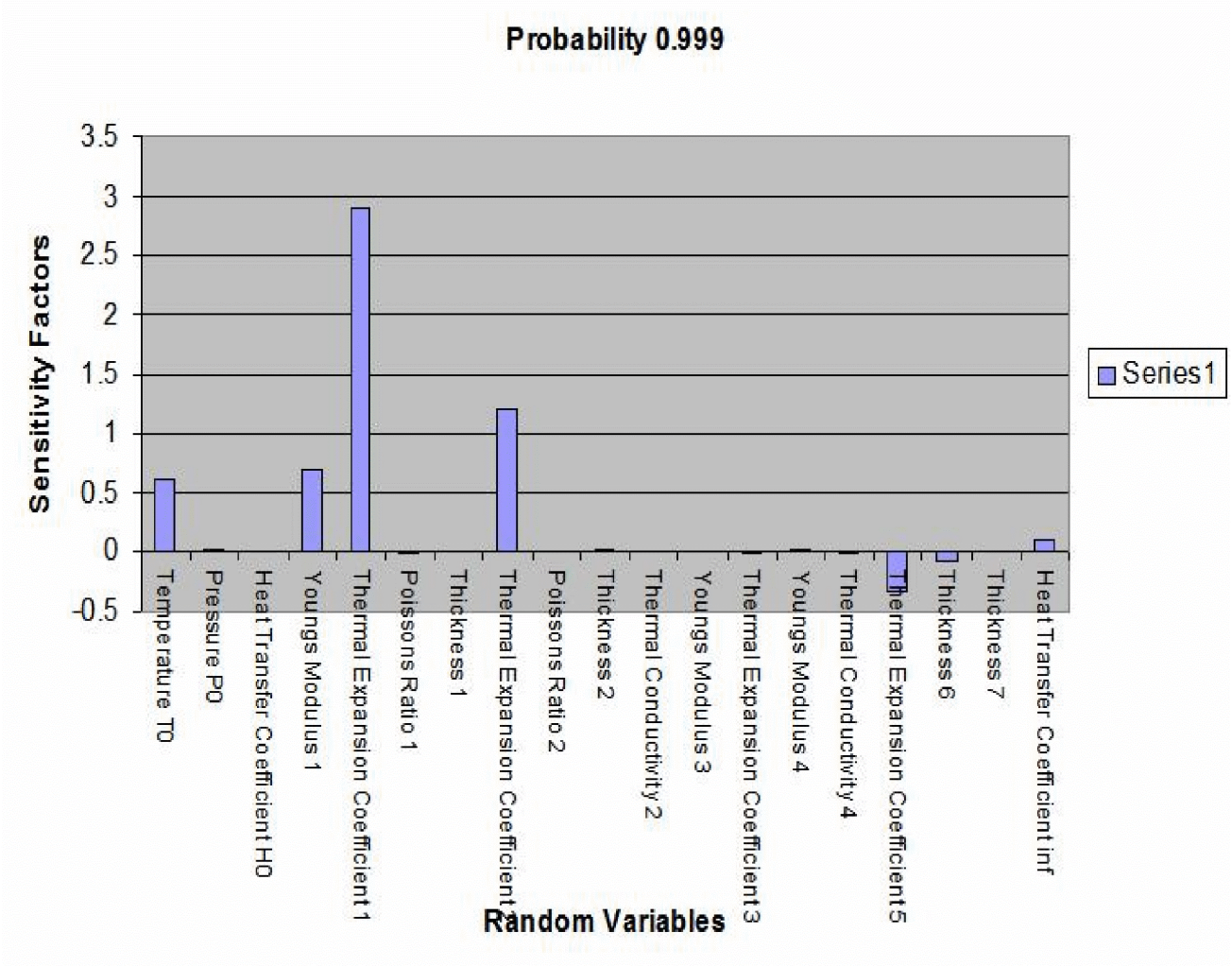

Figure 40: Probability 0.999 Random Variables Vs Sensitivity Factors

APPENDIX

Probabilistic Analysis Results using NESSUS/FPI

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***** INPUT ECHO *****

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LINE

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 1  *FPI
 2  LNG HOSE
 3  *RVNUM  40
 4  *GFUNCTION 2
 5  *DATASETNM  81
 6  *METHOD 1
 7  *ANALTYP PLEVELS
 8  *PRINTOPT 1
 9  *END
10  *DATASETS
11   -1.6000000E+02
12    1.5000000E+02
13    4.9707000E+03
14    2.0000000E+11
15    1.2000000E-05
16    3.0000000E-01
17    5.9000000E+00
18    6.0500000E+01
19    3.4500000E+08
20    9.0000000E-05
21    0.4800000E+00
22    5.0000000E+00
23    0.2400000E+00
24    1.2700000E+09
25    1.3000000E-04
26    0.3500000E+00
27    2.8000000E+00
28    0.2770000E+00
29    9.4000000E+08
30    1.0000000E-04
31    0.4900000E+00
32    4.0000000E+01
33    1.2000000E-02
34    1.5000000E+06
35    1.1000000E-04
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36 0.4000000E+00
37 8.0000000E+00
38 0.2100000E+00
39 1.0000000E+06
40 1.1000000E-04
41 0.4000000E+00
42 3.0000000E+00
43 0.2100000E+00
44 3.0000000E+05
45 1.1000000E-04
46 0.4000000E+00
47 9.1200000E+01
48 3.8500000E+00
49 3.0000000E+01
50 0.2100000E+00
51 4.4390000E+08
52 -1.7600000E+02
53 1.5000000E+02
54 4.9707000E+03
55 2.0000000E+11
56 1.2000000E-05
57 3.0000000E-01
58 5.9000000E+00
59 6.0500000E+01
60 3.4500000E+08
61 9.0000000E-05
62 0.4800000E+00
63 5.0000000E+00
64 0.2400000E+00
65 1.2700000E+09
66 1.3000000E-04
67 0.3500000E+00
68 2.8000000E+00
69 0.2770000E+00
70 9.4000000E+08
71 1.0000000E-04
72 0.4900000E+00
73 4.0000000E+01
74 1.2000000E-02
75 1.5000000E+06
76 1.1000000E-04
77 0.4000000E+00
78 8.0000000E+00
79 0.2100000E+00
80 1.0000000E+06
81 1.1000000E-04

82 0.4000000E+00
83 3.0000000E+00
84 0.2100000E+00
85 3.0000000E+05
86 1.1000000E-04
87 0.4000000E+00
88 9.1200000E+01
89 3.8500000E+00
90 3.0000000E+01
91 0.2100000E+00
92 4.8305000E+08
93 -1.4400000E+02
94 1.5000000E+02
95 4.9707000E+03
96 2.0000000E+11
97 1.2000000E-05
98 3.0000000E-01
99 5.9000000E+00
100 6.0500000E+01
101 3.4500000E+08
102 9.0000000E-05
103 0.4800000E+00
104 5.0000000E+00
105 0.2400000E+00
106 1.2700000E+09
107 1.3000000E-04
108 0.3500000E+00
109 2.8000000E+00
110 0.2770000E+00
111 9.4000000E+08
112 1.0000000E-04
113 0.4900000E+00
114 4.0000000E+01
115 1.2000000E-02
116 1.5000000E+06
117 1.1000000E-04
118 0.4000000E+00
119 8.0000000E+00
120 0.2100000E+00
121 1.0000000E+06
122 1.1000000E-04
123 0.4000000E+00
124 3.0000000E+00
125 0.2100000E+00
126 3.0000000E+05
127 1.1000000E-04

128 0.4000000E+00
129 9.1200000E+01
130 3.8500000E+00
131 3.0000000E+01
132 0.2100000E+00
133 4.0480000E+08
134 -1.6000000E+02
135 1.6500000E+02
136 4.9707000E+03
137 2.0000000E+11
138 1.2000000E-05
139 3.0000000E-01
140 5.9000000E+00
141 6.0500000E+01
142 3.4500000E+08
143 9.0000000E-05
144 0.4800000E+00
145 5.0000000E+00
146 0.2400000E+00
147 1.2700000E+09
148 1.3000000E-04
149 0.3500000E+00
150 2.8000000E+00
151 0.2770000E+00
152 9.4000000E+08
153 1.0000000E-04
154 0.4900000E+00
155 4.0000000E+01
156 1.2000000E-02
157 1.5000000E+06
158 1.1000000E-04
159 0.4000000E+00
160 8.0000000E+00
161 0.2100000E+00
162 1.0000000E+06
163 1.1000000E-04
164 0.4000000E+00
165 3.0000000E+00
166 0.2100000E+00
167 3.0000000E+05
168 1.1000000E-04
169 0.4000000E+00
170 9.1200000E+01
171 3.8500000E+00
172 3.0000000E+01
173 0.2100000E+00

174	4.4382000E+08
175	-1.6000000E+02
176	1.3500000E+02
177	4.9707000E+03
178	2.0000000E+11
179	1.2000000E-05
180	3.0000000E-01
181	5.9000000E+00
182	6.0500000E+01
183	3.4500000E+08
184	9.0000000E-05
185	0.4800000E+00
186	5.0000000E+00
187	0.2400000E+00
188	1.2700000E+09
189	1.3000000E-04
190	0.3500000E+00
191	2.8000000E+00
192	0.2770000E+00
193	9.4000000E+08
194	1.0000000E-04
195	0.4900000E+00
196	4.0000000E+01
197	1.2000000E-02
198	1.5000000E+06
199	1.1000000E-04
200	0.4000000E+00
201	8.0000000E+00
202	0.2100000E+00
203	1.0000000E+06
204	1.1000000E-04
205	0.4000000E+00
206	3.0000000E+00
207	0.2100000E+00
208	3.0000000E+05
209	1.1000000E-04
210	0.4000000E+00
211	9.1200000E+01
212	3.8500000E+00
213	3.0000000E+01
214	0.2100000E+00
215	4.4030000E+08
216	-1.6000000E+02
217	1.5000000E+02
218	5.4677700E+03
219	2.0000000E+11

220 1.2000000E-05
221 3.0000000E-01
222 5.9000000E+00
223 6.0500000E+01
224 3.4500000E+08
225 9.0000000E-05
226 0.4800000E+00
227 5.0000000E+00
228 0.2400000E+00
229 1.2700000E+09
230 1.3000000E-04
231 0.3500000E+00
232 2.8000000E+00
233 0.2770000E+00
234 9.4000000E+08
235 1.0000000E-04
236 0.4900000E+00
237 4.0000000E+01
238 1.2000000E-02
239 1.5000000E+06
240 1.1000000E-04
241 0.4000000E+00
242 8.0000000E+00
243 0.2100000E+00
244 1.0000000E+06
245 1.1000000E-04
246 0.4000000E+00
247 3.0000000E+00
248 0.2100000E+00
249 3.0000000E+05
250 1.1000000E-04
251 0.4000000E+00
252 9.1200000E+01
253 3.8500000E+00
254 3.0000000E+01
255 0.2100000E+00
256 4.4401000E+08
257 -1.6000000E+02
258 1.5000000E+02
259 4.4736300E+03
260 2.0000000E+11
261 1.2000000E-05
262 3.0000000E-01
263 5.9000000E+00
264 6.0500000E+01
265 3.4500000E+08

266 9.0000000E-05
267 0.4800000E+00
268 5.0000000E+00
269 0.2400000E+00
270 1.2700000E+09
271 1.3000000E-04
272 0.3500000E+00
273 2.8000000E+00
274 0.2770000E+00
275 9.4000000E+08
276 1.0000000E-04
277 0.4900000E+00
278 4.0000000E+01
279 1.2000000E-02
280 1.5000000E+06
281 1.1000000E-04
282 0.4000000E+00
283 8.0000000E+00
284 0.2100000E+00
285 1.0000000E+06
286 1.1000000E-04
287 0.4000000E+00
288 3.0000000E+00
289 0.2100000E+00
290 3.0000000E+05
291 1.1000000E-04
292 0.4000000E+00
293 9.1200000E+01
294 3.8500000E+00
295 3.0000000E+01
296 0.2100000E+00
297 4.4324000E+08
298 -1.6000000E+02
299 1.5000000E+02
300 4.9707000E+03
301 2.2000000E+11
302 1.2000000E-05
303 3.0000000E-01
304 5.9000000E+00
305 6.0500000E+01
306 3.4500000E+08
307 9.0000000E-05
308 0.4800000E+00
309 5.0000000E+00
310 0.2400000E+00
311 1.2700000E+09

312 1.3000000E-04
313 0.3500000E+00
314 2.8000000E+00
315 0.2770000E+00
316 9.4000000E+08
317 1.0000000E-04
318 0.4900000E+00
319 4.0000000E+01
320 1.2000000E-02
321 1.5000000E+06
322 1.1000000E-04
323 0.4000000E+00
324 8.0000000E+00
325 0.2100000E+00
326 1.0000000E+06
327 1.1000000E-04
328 0.4000000E+00
329 3.0000000E+00
330 0.2100000E+00
331 3.0000000E+05
332 1.1000000E-04
333 0.4000000E+00
334 9.1200000E+01
335 3.8500000E+00
336 3.0000000E+01
337 0.2100000E+00
338 4.8826000E+08
339 -1.6000000E+02
340 1.5000000E+02
341 4.9707000E+03
342 1.8000000E+11
343 1.2000000E-05
344 3.0000000E-01
345 5.9000000E+00
346 6.0500000E+01
347 3.4500000E+08
348 9.0000000E-05
349 0.4800000E+00
350 5.0000000E+00
351 0.2400000E+00
352 1.2700000E+09
353 1.3000000E-04
354 0.3500000E+00
355 2.8000000E+00
356 0.2770000E+00
357 9.4000000E+08

358	1.0000000E-04
359	0.4900000E+00
360	4.0000000E+01
361	1.2000000E-02
362	1.5000000E+06
363	1.1000000E-04
364	0.4000000E+00
365	8.0000000E+00
366	0.2100000E+00
367	1.0000000E+06
368	1.1000000E-04
369	0.4000000E+00
370	3.0000000E+00
371	0.2100000E+00
372	3.0000000E+05
373	1.1000000E-04
374	0.4000000E+00
375	9.1200000E+01
376	3.8500000E+00
377	3.0000000E+01
378	0.2100000E+00
379	3.9956000E+08
380	-1.6000000E+02
381	1.5000000E+02
382	4.9707000E+03
383	2.0000000E+11
384	1.3200000E-05
385	3.0000000E-01
386	5.9000000E+00
387	6.0500000E+01
388	3.4500000E+08
389	9.0000000E-05
390	0.4800000E+00
391	5.0000000E+00
392	0.2400000E+00
393	1.2700000E+09
394	1.3000000E-04
395	0.3500000E+00
396	2.8000000E+00
397	0.2770000E+00
398	9.4000000E+08
399	1.0000000E-04
400	0.4900000E+00
401	4.0000000E+01
402	1.2000000E-02
403	1.5000000E+06

404	1.1000000E-04
405	0.4000000E+00
406	8.0000000E+00
407	0.2100000E+00
408	1.0000000E+06
409	1.1000000E-04
410	0.4000000E+00
411	3.0000000E+00
412	0.2100000E+00
413	3.0000000E+05
414	1.1000000E-04
415	0.4000000E+00
416	9.1200000E+01
417	3.8500000E+00
418	3.0000000E+01
419	0.2100000E+00
420	5.0297000E+08
421	-1.6000000E+02
422	1.5000000E+02
423	4.9707000E+03
424	2.0000000E+11
425	1.0800000E-05
426	3.0000000E-01
427	5.9000000E+00
428	6.0500000E+01
429	3.4500000E+08
430	9.0000000E-05
431	0.4800000E+00
432	5.0000000E+00
433	0.2400000E+00
434	1.2700000E+09
435	1.3000000E-04
436	0.3500000E+00
437	2.8000000E+00
438	0.2770000E+00
439	9.4000000E+08
440	1.0000000E-04
441	0.4900000E+00
442	4.0000000E+01
443	1.2000000E-02
444	1.5000000E+06
445	1.1000000E-04
446	0.4000000E+00
447	8.0000000E+00
448	0.2100000E+00
449	1.0000000E+06

450	1.1000000E-04
451	0.4000000E+00
452	3.0000000E+00
453	0.2100000E+00
454	3.0000000E+05
455	1.1000000E-04
456	0.4000000E+00
457	9.1200000E+01
458	3.8500000E+00
459	3.0000000E+01
460	0.2100000E+00
461	4.3656000E+08
462	-1.6000000E+02
463	1.5000000E+02
464	4.9707000E+03
465	2.0000000E+11
466	1.2000000E-05
467	3.3000000E-01
468	5.9000000E+00
469	6.0500000E+01
470	3.4500000E+08
471	9.0000000E-05
472	0.4800000E+00
473	5.0000000E+00
474	0.2400000E+00
475	1.2700000E+09
476	1.3000000E-04
477	0.3500000E+00
478	2.8000000E+00
479	0.2770000E+00
480	9.4000000E+08
481	1.0000000E-04
482	0.4900000E+00
483	4.0000000E+01
484	1.2000000E-02
485	1.5000000E+06
486	1.1000000E-04
487	0.4000000E+00
488	8.0000000E+00
489	0.2100000E+00
490	1.0000000E+06
491	1.1000000E-04
492	0.4000000E+00
493	3.0000000E+00
494	0.2100000E+00
495	3.0000000E+05

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499 3.8500000E+00
500 3.0000000E+01
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502 4.4329000E+08
503 -1.6000000E+02
504 1.5000000E+02
505 4.9707000E+03
506 2.0000000E+11
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509 5.9000000E+00
510 6.0500000E+01
511 3.4500000E+08
512 9.0000000E-05
513 0.4800000E+00
514 5.0000000E+00
515 0.2400000E+00
516 1.2700000E+09
517 1.3000000E-04
518 0.3500000E+00
519 2.8000000E+00
520 0.2770000E+00
521 9.4000000E+08
522 1.0000000E-04
523 0.4900000E+00
524 4.0000000E+01
525 1.2000000E-02
526 1.5000000E+06
527 1.1000000E-04
528 0.4000000E+00
529 8.0000000E+00
530 0.2100000E+00
531 1.0000000E+06
532 1.1000000E-04
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534 3.0000000E+00
535 0.2100000E+00
536 3.0000000E+05
537 1.1000000E-04
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539 9.1200000E+01
540 3.8500000E+00
541 3.0000000E+01

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543 4.4450000E+08
544 -1.6000000E+02
545 1.5000000E+02
546 4.9707000E+03
547 2.0000000E+11
548 1.2000000E-05
549 3.0000000E-01
550 6.4900000E+00
551 6.0500000E+01
552 3.4500000E+08
553 9.0000000E-05
554 0.4800000E+00
555 5.0000000E+00
556 0.2400000E+00
557 1.2700000E+09
558 1.3000000E-04
559 0.3500000E+00
560 2.8000000E+00
561 0.2770000E+00
562 9.4000000E+08
563 1.0000000E-04
564 0.4900000E+00
565 4.0000000E+01
566 1.2000000E-02
567 1.5000000E+06
568 1.1000000E-04
569 0.4000000E+00
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571 0.2100000E+00
572 1.0000000E+06
573 1.1000000E-04
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575 3.0000000E+00
576 0.2100000E+00
577 3.0000000E+05
578 1.1000000E-04
579 0.4000000E+00
580 9.1200000E+01
581 3.8500000E+00
582 3.0000000E+01
583 0.2100000E+00
584 4.4394000E+08
585 -1.6000000E+02
586 1.5000000E+02
587 4.9707000E+03

588 2.0000000E+11
589 1.2000000E-05
590 3.0000000E-01
591 5.3100000E+00
592 6.0500000E+01
593 3.4500000E+08
594 9.0000000E-05
595 0.4800000E+00
596 5.0000000E+00
597 0.2400000E+00
598 1.2700000E+09
599 1.3000000E-04
600 0.3500000E+00
601 2.8000000E+00
602 0.2770000E+00
603 9.4000000E+08
604 1.0000000E-04
605 0.4900000E+00
606 4.0000000E+01
607 1.2000000E-02
608 1.5000000E+06
609 1.1000000E-04
610 0.4000000E+00
611 8.0000000E+00
612 0.2100000E+00
613 1.0000000E+06
614 1.1000000E-04
615 0.4000000E+00
616 3.0000000E+00
617 0.2100000E+00
618 3.0000000E+05
619 1.1000000E-04
620 0.4000000E+00
621 9.1200000E+01
622 3.8500000E+00
623 3.0000000E+01
624 0.2100000E+00
625 4.4409000E+08
626 -1.6000000E+02
627 1.5000000E+02
628 4.9707000E+03
629 2.0000000E+11
630 1.2000000E-05
631 3.0000000E-01
632 5.9000000E+00
633 6.6550000E+01

634 3.4500000E+08
635 9.0000000E-05
636 0.4800000E+00
637 5.0000000E+00
638 0.2400000E+00
639 1.2700000E+09
640 1.3000000E-04
641 0.3500000E+00
642 2.8000000E+00
643 0.2770000E+00
644 9.4000000E+08
645 1.0000000E-04
646 0.4900000E+00
647 4.0000000E+01
648 1.2000000E-02
649 1.5000000E+06
650 1.1000000E-04
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652 8.0000000E+00
653 0.2100000E+00
654 1.0000000E+06
655 1.1000000E-04
656 0.4000000E+00
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658 0.2100000E+00
659 3.0000000E+05
660 1.1000000E-04
661 0.4000000E+00
662 9.1200000E+01
663 3.8500000E+00
664 3.0000000E+01
665 0.2100000E+00
666 4.4393000E+08
667 -1.6000000E+02
668 1.5000000E+02
669 4.9707000E+03
670 2.0000000E+11
671 1.2000000E-05
672 3.0000000E-01
673 5.9000000E+00
674 5.4450000E+01
675 3.4500000E+08
676 9.0000000E-05
677 0.4800000E+00
678 5.0000000E+00
679 0.2400000E+00

680 1.2700000E+09
681 1.3000000E-04
682 0.3500000E+00
683 2.8000000E+00
684 0.2770000E+00
685 9.4000000E+08
686 1.0000000E-04
687 0.4900000E+00
688 4.0000000E+01
689 1.2000000E-02
690 1.5000000E+06
691 1.1000000E-04
692 0.4000000E+00
693 8.0000000E+00
694 0.2100000E+00
695 1.0000000E+06
696 1.1000000E-04
697 0.4000000E+00
698 3.0000000E+00
699 0.2100000E+00
700 3.0000000E+05
701 1.1000000E-04
702 0.4000000E+00
703 9.1200000E+01
704 3.8500000E+00
705 3.0000000E+01
706 0.2100000E+00
707 4.4396000E+08
708 -1.6000000E+02
709 1.5000000E+02
710 4.9707000E+03
711 2.0000000E+11
712 1.2000000E-05
713 3.0000000E-01
714 5.9000000E+00
715 6.0500000E+01
716 3.7950000E+08
717 9.0000000E-05
718 0.4800000E+00
719 5.0000000E+00
720 0.2400000E+00
721 1.2700000E+09
722 1.3000000E-04
723 0.3500000E+00
724 2.8000000E+00
725 0.2770000E+00

726	9.4000000E+08
727	1.0000000E-04
728	0.4900000E+00
729	4.0000000E+01
730	1.2000000E-02
731	1.5000000E+06
732	1.1000000E-04
733	0.4000000E+00
734	8.0000000E+00
735	0.2100000E+00
736	1.0000000E+06
737	1.1000000E-04
738	0.4000000E+00
739	3.0000000E+00
740	0.2100000E+00
741	3.0000000E+05
742	1.1000000E-04
743	0.4000000E+00
744	9.1200000E+01
745	3.8500000E+00
746	3.0000000E+01
747	0.2100000E+00
748	4.4410000E+08
749	-1.6000000E+02
750	1.5000000E+02
751	4.9707000E+03
752	2.0000000E+11
753	1.2000000E-05
754	3.0000000E-01
755	5.9000000E+00
756	6.0500000E+01
757	3.1050000E+08
758	9.0000000E-05
759	0.4800000E+00
760	5.0000000E+00
761	0.2400000E+00
762	1.2700000E+09
763	1.3000000E-04
764	0.3500000E+00
765	2.8000000E+00
766	0.2770000E+00
767	9.4000000E+08
768	1.0000000E-04
769	0.4900000E+00
770	4.0000000E+01
771	1.2000000E-02

772 1.5000000E+06
773 1.1000000E-04
774 0.4000000E+00
775 8.0000000E+00
776 0.2100000E+00
777 1.0000000E+06
778 1.1000000E-04
779 0.4000000E+00
780 3.0000000E+00
781 0.2100000E+00
782 3.0000000E+05
783 1.1000000E-04
784 0.4000000E+00
785 9.1200000E+01
786 3.8500000E+00
787 3.0000000E+01
788 0.2100000E+00
789 4.4372000E+08
790 -1.6000000E+02
791 1.5000000E+02
792 4.9707000E+03
793 2.0000000E+11
794 1.2000000E-05
795 3.0000000E-01
796 5.9000000E+00
797 6.0500000E+01
798 3.4500000E+08
799 9.9000000E-05
800 0.4800000E+00
801 5.0000000E+00
802 0.2400000E+00
803 1.2700000E+09
804 1.3000000E-04
805 0.3500000E+00
806 2.8000000E+00
807 0.2770000E+00
808 9.4000000E+08
809 1.0000000E-04
810 0.4900000E+00
811 4.0000000E+01
812 1.2000000E-02
813 1.5000000E+06
814 1.1000000E-04
815 0.4000000E+00
816 8.0000000E+00
817 0.2100000E+00

818 1.0000000E+06
819 1.1000000E-04
820 0.4000000E+00
821 3.0000000E+00
822 0.2100000E+00
823 3.0000000E+05
824 1.1000000E-04
825 0.4000000E+00
826 9.1200000E+01
827 3.8500000E+00
828 3.0000000E+01
829 0.2100000E+00
830 4.8350000E+08
831 -1.6000000E+02
832 1.5000000E+02
833 4.9707000E+03
834 2.0000000E+11
835 1.2000000E-05
836 3.0000000E-01
837 5.9000000E+00
838 6.0500000E+01
839 3.4500000E+08
840 8.1000000E-05
841 0.4800000E+00
842 5.0000000E+00
843 0.2400000E+00
844 1.2700000E+09
845 1.3000000E-04
846 0.3500000E+00
847 2.8000000E+00
848 0.2770000E+00
849 9.4000000E+08
850 1.0000000E-04
851 0.4900000E+00
852 4.0000000E+01
853 1.2000000E-02
854 1.5000000E+06
855 1.1000000E-04
856 0.4000000E+00
857 8.0000000E+00
858 0.2100000E+00
859 1.0000000E+06
860 1.1000000E-04
861 0.4000000E+00
862 3.0000000E+00
863 0.2100000E+00

864	3.0000000E+05
865	1.1000000E-04
866	0.4000000E+00
867	9.1200000E+01
868	3.8500000E+00
869	3.0000000E+01
870	0.2100000E+00
871	4.5607000E+08
872	-1.6000000E+02
873	1.5000000E+02
874	4.9707000E+03
875	2.0000000E+11
876	1.2000000E-05
877	3.0000000E-01
878	5.9000000E+00
879	6.0500000E+01
880	3.4500000E+08
881	9.0000000E-05
882	5.2800000E-01
883	5.0000000E+00
884	0.2400000E+00
885	1.2700000E+09
886	1.3000000E-04
887	0.3500000E+00
888	2.8000000E+00
889	0.2770000E+00
890	9.4000000E+08
891	1.0000000E-04
892	0.4900000E+00
893	4.0000000E+01
894	1.2000000E-02
895	1.5000000E+06
896	1.1000000E-04
897	0.4000000E+00
898	8.0000000E+00
899	0.2100000E+00
900	1.0000000E+06
901	1.1000000E-04
902	0.4000000E+00
903	3.0000000E+00
904	0.2100000E+00
905	3.0000000E+05
906	1.1000000E-04
907	0.4000000E+00
908	9.1200000E+01
909	3.8500000E+00

910 3.0000000E+01
911 0.2100000E+00
912 4.4100000E+08
913 -1.6000000E+02
914 1.5000000E+02
915 4.9707000E+03
916 2.0000000E+11
917 1.2000000E-05
918 3.0000000E-01
919 5.9000000E+00
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921 3.4500000E+08
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923 4.3200000E-01
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925 0.2400000E+00
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927 1.3000000E-04
928 0.3500000E+00
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930 0.2770000E+00
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933 0.4900000E+00
934 4.0000000E+01
935 1.2000000E-02
936 1.5000000E+06
937 1.1000000E-04
938 0.4000000E+00
939 8.0000000E+00
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945 0.2100000E+00
946 3.0000000E+05
947 1.1000000E-04
948 0.4000000E+00
949 9.1200000E+01
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951 3.0000000E+01
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953 4.4065000E+08
954 -1.6000000E+02
955 1.5000000E+02

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957	2.0000000E+11
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960	5.9000000E+00
961	6.0500000E+01
962	3.4500000E+08
963	9.0000000E-05
964	0.4800000E+00
965	5.5000000E+00
966	0.2400000E+00
967	1.2700000E+09
968	1.3000000E-04
969	0.3500000E+00
970	2.8000000E+00
971	0.2770000E+00
972	9.4000000E+08
973	1.0000000E-04
974	0.4900000E+00
975	4.0000000E+01
976	1.2000000E-02
977	1.5000000E+06
978	1.1000000E-04
979	0.4000000E+00
980	8.0000000E+00
981	0.2100000E+00
982	1.0000000E+06
983	1.1000000E-04
984	0.4000000E+00
985	3.0000000E+00
986	0.2100000E+00
987	3.0000000E+05
988	1.1000000E-04
989	0.4000000E+00
990	9.1200000E+01
991	3.8500000E+00
992	3.0000000E+01
993	0.2100000E+00
994	4.4409000E+08
995	-1.6000000E+02
996	1.5000000E+02
997	4.9707000E+03
998	2.0000000E+11
999	1.2000000E-05
1000	3.0000000E-01
1001	5.9000000E+00

1002	6.0500000E+01
1003	3.4500000E+08
1004	9.0000000E-05
1005	0.4800000E+00
1006	4.5000000E+00
1007	0.2400000E+00
1008	1.2700000E+09
1009	1.3000000E-04
1010	0.3500000E+00
1011	2.8000000E+00
1012	0.2770000E+00
1013	9.4000000E+08
1014	1.0000000E-04
1015	0.4900000E+00
1016	4.0000000E+01
1017	1.2000000E-02
1018	1.5000000E+06
1019	1.1000000E-04
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1021	8.0000000E+00
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1023	1.0000000E+06
1024	1.1000000E-04
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1026	3.0000000E+00
1027	0.2100000E+00
1028	3.0000000E+05
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1033	3.0000000E+01
1034	0.2100000E+00
1035	4.4090000E+08
1036	-1.6000000E+02
1037	1.5000000E+02
1038	4.9707000E+03
1039	2.0000000E+11
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1041	3.0000000E-01
1042	5.9000000E+00
1043	6.0500000E+01
1044	3.4500000E+08
1045	9.0000000E-05
1046	0.4800000E+00
1047	5.0000000E+00

1048	2.6400000E-01
1049	1.2700000E+09
1050	1.3000000E-04
1051	0.3500000E+00
1052	2.8000000E+00
1053	0.2770000E+00
1054	9.4000000E+08
1055	1.0000000E-04
1056	0.4900000E+00
1057	4.0000000E+01
1058	1.2000000E-02
1059	1.5000000E+06
1060	1.1000000E-04
1061	0.4000000E+00
1062	8.0000000E+00
1063	0.2100000E+00
1064	1.0000000E+06
1065	1.1000000E-04
1066	0.4000000E+00
1067	3.0000000E+00
1068	0.2100000E+00
1069	3.0000000E+05
1070	1.1000000E-04
1071	0.4000000E+00
1072	9.1200000E+01
1073	3.8500000E+00
1074	3.0000000E+01
1075	0.2100000E+00
1076	4.4406000E+08
1077	-1.6000000E+02
1078	1.5000000E+02
1079	4.9707000E+03
1080	2.0000000E+11
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1082	3.0000000E-01
1083	5.9000000E+00
1084	6.0500000E+01
1085	3.4500000E+08
1086	9.0000000E-05
1087	0.4800000E+00
1088	5.0000000E+00
1089	2.1600000E-01
1090	1.2700000E+09
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1092	0.3500000E+00
1093	2.8000000E+00

1094	0.2770000E+00
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1097	0.4900000E+00
1098	4.0000000E+01
1099	1.2000000E-02
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1101	1.1000000E-04
1102	0.4000000E+00
1103	8.0000000E+00
1104	0.2100000E+00
1105	1.0000000E+06
1106	1.1000000E-04
1107	0.4000000E+00
1108	3.0000000E+00
1109	0.2100000E+00
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1113	9.1200000E+01
1114	3.8500000E+00
1115	3.0000000E+01
1116	0.2100000E+00
1117	4.4375000E+08
1118	-1.6000000E+02
1119	1.5000000E+02
1120	4.9707000E+03
1121	2.0000000E+11
1122	1.2000000E-05
1123	3.0000000E-01
1124	5.9000000E+00
1125	6.0500000E+01
1126	3.4500000E+08
1127	9.0000000E-05
1128	0.4800000E+00
1129	5.0000000E+00
1130	0.2400000E+00
1131	1.3970000E+09
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1133	0.3500000E+00
1134	2.8000000E+00
1135	0.2770000E+00
1136	9.4000000E+08
1137	1.0000000E-04
1138	0.4900000E+00
1139	4.0000000E+01

1140	1.2000000E-02
1141	1.5000000E+06
1142	1.1000000E-04
1143	0.4000000E+00
1144	8.0000000E+00
1145	0.2100000E+00
1146	1.0000000E+06
1147	1.1000000E-04
1148	0.4000000E+00
1149	3.0000000E+00
1150	0.2100000E+00
1151	3.0000000E+05
1152	1.1000000E-04
1153	0.4000000E+00
1154	9.1200000E+01
1155	3.8500000E+00
1156	3.0000000E+01
1157	0.2100000E+00
1158	4.4392000E+08
1159	-1.6000000E+02
1160	1.5000000E+02
1161	4.9707000E+03
1162	2.0000000E+11
1163	1.2000000E-05
1164	3.0000000E-01
1165	5.9000000E+00
1166	6.0500000E+01
1167	3.4500000E+08
1168	9.0000000E-05
1169	0.4800000E+00
1170	5.0000000E+00
1171	0.2400000E+00
1172	1.1430000E+09
1173	1.3000000E-04
1174	0.3500000E+00
1175	2.8000000E+00
1176	0.2770000E+00
1177	9.4000000E+08
1178	1.0000000E-04
1179	0.4900000E+00
1180	4.0000000E+01
1181	1.2000000E-02
1182	1.5000000E+06
1183	1.1000000E-04
1184	0.4000000E+00
1185	8.0000000E+00

1186	0.2100000E+00
1187	1.0000000E+06
1188	1.1000000E-04
1189	0.4000000E+00
1190	3.0000000E+00
1191	0.2100000E+00
1192	3.0000000E+05
1193	1.1000000E-04
1194	0.4000000E+00
1195	9.1200000E+01
1196	3.8500000E+00
1197	3.0000000E+01
1198	0.2100000E+00
1199	4.4372000E+08
1200	-1.6000000E+02
1201	1.5000000E+02
1202	4.9707000E+03
1203	2.0000000E+11
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1205	3.0000000E-01
1206	5.9000000E+00
1207	6.0500000E+01
1208	3.4500000E+08
1209	9.0000000E-05
1210	0.4800000E+00
1211	5.0000000E+00
1212	0.2400000E+00
1213	1.2700000E+09
1214	1.4300000E-04
1215	0.3500000E+00
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1217	0.2770000E+00
1218	9.4000000E+08
1219	1.0000000E-04
1220	0.4900000E+00
1221	4.0000000E+01
1222	1.2000000E-02
1223	1.5000000E+06
1224	1.1000000E-04
1225	0.4000000E+00
1226	8.0000000E+00
1227	0.2100000E+00
1228	1.0000000E+06
1229	1.1000000E-04
1230	0.4000000E+00
1231	3.0000000E+00

1232 0.2100000E+00
1233 3.0000000E+05
1234 1.1000000E-04
1235 0.4000000E+00
1236 9.1200000E+01
1237 3.8500000E+00
1238 3.0000000E+01
1239 0.2100000E+00
1240 4.6870000E+08
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1243 4.9707000E+03
1244 2.0000000E+11
1245 1.2000000E-05
1246 3.0000000E-01
1247 5.9000000E+00
1248 6.0500000E+01
1249 3.4500000E+08
1250 9.0000000E-05
1251 0.4800000E+00
1252 5.0000000E+00
1253 0.2400000E+00
1254 1.2700000E+09
1255 1.1700000E-04
1256 0.3500000E+00
1257 2.8000000E+00
1258 0.2770000E+00
1259 9.4000000E+08
1260 1.0000000E-04
1261 0.4900000E+00
1262 4.0000000E+01
1263 1.2000000E-02
1264 1.5000000E+06
1265 1.1000000E-04
1266 0.4000000E+00
1267 8.0000000E+00
1268 0.2100000E+00
1269 1.0000000E+06
1270 1.1000000E-04
1271 0.4000000E+00
1272 3.0000000E+00
1273 0.2100000E+00
1274 3.0000000E+05
1275 1.1000000E-04
1276 0.4000000E+00
1277 9.1200000E+01

1278	3.8500000E+00
1279	3.0000000E+01
1280	0.2100000E+00
1281	4.6895000E+08
1282	-1.6000000E+02
1283	1.5000000E+02
1284	4.9707000E+03
1285	2.0000000E+11
1286	1.2000000E-05
1287	3.0000000E-01
1288	5.9000000E+00
1289	6.0500000E+01
1290	3.4500000E+08
1291	9.0000000E-05
1292	0.4800000E+00
1293	5.0000000E+00
1294	0.2400000E+00
1295	1.2700000E+09
1296	1.3000000E-04
1297	3.8500000E-01
1298	2.8000000E+00
1299	0.2770000E+00
1300	9.4000000E+08
1301	1.0000000E-04
1302	0.4900000E+00
1303	4.0000000E+01
1304	1.2000000E-02
1305	1.5000000E+06
1306	1.1000000E-04
1307	0.4000000E+00
1308	8.0000000E+00
1309	0.2100000E+00
1310	1.0000000E+06
1311	1.1000000E-04
1312	0.4000000E+00
1313	3.0000000E+00
1314	0.2100000E+00
1315	3.0000000E+05
1316	1.1000000E-04
1317	0.4000000E+00
1318	9.1200000E+01
1319	3.8500000E+00
1320	3.0000000E+01
1321	0.2100000E+00
1322	4.4391000E+08
1323	-1.6000000E+02

1324	1.5000000E+02
1325	4.9707000E+03
1326	2.0000000E+11
1327	1.2000000E-05
1328	3.0000000E-01
1329	5.9000000E+00
1330	6.0500000E+01
1331	3.4500000E+08
1332	9.0000000E-05
1333	0.4800000E+00
1334	5.0000000E+00
1335	0.2400000E+00
1336	1.2700000E+09
1337	1.3000000E-04
1338	3.1500000E-01
1339	2.8000000E+00
1340	0.2770000E+00
1341	9.4000000E+08
1342	1.0000000E-04
1343	0.4900000E+00
1344	4.0000000E+01
1345	1.2000000E-02
1346	1.5000000E+06
1347	1.1000000E-04
1348	0.4000000E+00
1349	8.0000000E+00
1350	0.2100000E+00
1351	1.0000000E+06
1352	1.1000000E-04
1353	0.4000000E+00
1354	3.0000000E+00
1355	0.2100000E+00
1356	3.0000000E+05
1357	1.1000000E-04
1358	0.4000000E+00
1359	9.1200000E+01
1360	3.8500000E+00
1361	3.0000000E+01
1362	0.2100000E+00
1363	4.4393000E+08
1364	-1.6000000E+02
1365	1.5000000E+02
1366	4.9707000E+03
1367	2.0000000E+11
1368	1.2000000E-05
1369	3.0000000E-01

1370	5.9000000E+00
1371	6.0500000E+01
1372	3.4500000E+08
1373	9.0000000E-05
1374	0.4800000E+00
1375	5.0000000E+00
1376	0.2400000E+00
1377	1.2700000E+09
1378	1.3000000E-04
1379	0.3500000E+00
1380	3.0800000E+00
1381	0.2770000E+00
1382	9.4000000E+08
1383	1.0000000E-04
1384	0.4900000E+00
1385	4.0000000E+01
1386	1.2000000E-02
1387	1.5000000E+06
1388	1.1000000E-04
1389	0.4000000E+00
1390	8.0000000E+00
1391	0.2100000E+00
1392	1.0000000E+06
1393	1.1000000E-04
1394	0.4000000E+00
1395	3.0000000E+00
1396	0.2100000E+00
1397	3.0000000E+05
1398	1.1000000E-04
1399	0.4000000E+00
1400	9.1200000E+01
1401	3.8500000E+00
1402	3.0000000E+01
1403	0.2100000E+00
1404	4.4409000E+08
1405	-1.6000000E+02
1406	1.5000000E+02
1407	4.9707000E+03
1408	2.0000000E+11
1409	1.2000000E-05
1410	3.0000000E-01
1411	5.9000000E+00
1412	6.0500000E+01
1413	3.4500000E+08
1414	9.0000000E-05
1415	0.4800000E+00

1416 5.0000000E+00
1417 0.2400000E+00
1418 1.2700000E+09
1419 1.3000000E-04
1420 0.3500000E+00
1421 2.5200000E+00
1422 0.2770000E+00
1423 9.4000000E+08
1424 1.0000000E-04
1425 0.4900000E+00
1426 4.0000000E+01
1427 1.2000000E-02
1428 1.5000000E+06
1429 1.1000000E-04
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1434 1.1000000E-04
1435 0.4000000E+00
1436 3.0000000E+00
1437 0.2100000E+00
1438 3.0000000E+05
1439 1.1000000E-04
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1443 3.0000000E+01
1444 0.2100000E+00
1445 4.4410000E+08
1446 -1.6000000E+02
1447 1.5000000E+02
1448 4.9707000E+03
1449 2.0000000E+11
1450 1.2000000E-05
1451 3.0000000E-01
1452 5.9000000E+00
1453 6.0500000E+01
1454 3.4500000E+08
1455 9.0000000E-05
1456 0.4800000E+00
1457 5.0000000E+00
1458 0.2400000E+00
1459 1.2700000E+09
1460 1.3000000E-04
1461 0.3500000E+00

1462	2.8000000E+00
1463	3.0470000E-01
1464	9.4000000E+08
1465	1.0000000E-04
1466	0.4900000E+00
1467	4.0000000E+01
1468	1.2000000E-02
1469	1.5000000E+06
1470	1.1000000E-04
1471	0.4000000E+00
1472	8.0000000E+00
1473	0.2100000E+00
1474	1.0000000E+06
1475	1.1000000E-04
1476	0.4000000E+00
1477	3.0000000E+00
1478	0.2100000E+00
1479	3.0000000E+05
1480	1.1000000E-04
1481	0.4000000E+00
1482	9.1200000E+01
1483	3.8500000E+00
1484	3.0000000E+01
1485	0.2100000E+00
1486	4.4392000E+08
1487	-1.6000000E+02
1488	1.5000000E+02
1489	4.9707000E+03
1490	2.0000000E+11
1491	1.2000000E-05
1492	3.0000000E-01
1493	5.9000000E+00
1494	6.0500000E+01
1495	3.4500000E+08
1496	9.0000000E-05
1497	0.4800000E+00
1498	5.0000000E+00
1499	0.2400000E+00
1500	1.2700000E+09
1501	1.3000000E-04
1502	0.3500000E+00
1503	2.8000000E+00
1504	2.4930000E-01
1505	9.4000000E+08
1506	1.0000000E-04
1507	0.4900000E+00

1508	4.0000000E+01
1509	1.2000000E-02
1510	1.5000000E+06
1511	1.1000000E-04
1512	0.4000000E+00
1513	8.0000000E+00
1514	0.2100000E+00
1515	1.0000000E+06
1516	1.1000000E-04
1517	0.4000000E+00
1518	3.0000000E+00
1519	0.2100000E+00
1520	3.0000000E+05
1521	1.1000000E-04
1522	0.4000000E+00
1523	9.1200000E+01
1524	3.8500000E+00
1525	3.0000000E+01
1526	0.2100000E+00
1527	4.4392000E+08
1528	-1.6000000E+02
1529	1.5000000E+02
1530	4.9707000E+03
1531	2.0000000E+11
1532	1.2000000E-05
1533	3.0000000E-01
1534	5.9000000E+00
1535	6.0500000E+01
1536	3.4500000E+08
1537	9.0000000E-05
1538	0.4800000E+00
1539	5.0000000E+00
1540	0.2400000E+00
1541	1.2700000E+09
1542	1.3000000E-04
1543	0.3500000E+00
1544	2.8000000E+00
1545	0.2770000E+00
1546	1.0340000E+09
1547	1.0000000E-04
1548	0.4900000E+00
1549	4.0000000E+01
1550	1.2000000E-02
1551	1.5000000E+06
1552	1.1000000E-04
1553	0.4000000E+00

1554 8.0000000E+00
1555 0.2100000E+00
1556 1.0000000E+06
1557 1.1000000E-04
1558 0.4000000E+00
1559 3.0000000E+00
1560 0.2100000E+00
1561 3.0000000E+05
1562 1.1000000E-04
1563 0.4000000E+00
1564 9.1200000E+01
1565 3.8500000E+00
1566 3.0000000E+01
1567 0.2100000E+00
1568 4.4389000E+08
1569 -1.6000000E+02
1570 1.5000000E+02
1571 4.9707000E+03
1572 2.0000000E+11
1573 1.2000000E-05
1574 3.0000000E-01
1575 5.9000000E+00
1576 6.0500000E+01
1577 3.4500000E+08
1578 9.0000000E-05
1579 0.4800000E+00
1580 5.0000000E+00
1581 0.2400000E+00
1582 1.2700000E+09
1583 1.3000000E-04
1584 0.3500000E+00
1585 2.8000000E+00
1586 0.2770000E+00
1587 8.4600000E+08
1588 1.0000000E-04
1589 0.4900000E+00
1590 4.0000000E+01
1591 1.2000000E-02
1592 1.5000000E+06
1593 1.1000000E-04
1594 0.4000000E+00
1595 8.0000000E+00
1596 0.2100000E+00
1597 1.0000000E+06
1598 1.1000000E-04
1599 0.4000000E+00

1600	3.0000000E+00
1601	0.2100000E+00
1602	3.0000000E+05
1603	1.1000000E-04
1604	0.4000000E+00
1605	9.1200000E+01
1606	3.8500000E+00
1607	3.0000000E+01
1608	0.2100000E+00
1609	4.4396000E+08
1610	-1.6000000E+02
1611	1.5000000E+02
1612	4.9707000E+03
1613	2.0000000E+11
1614	1.2000000E-05
1615	3.0000000E-01
1616	5.9000000E+00
1617	6.0500000E+01
1618	3.4500000E+08
1619	9.0000000E-05
1620	0.4800000E+00
1621	5.0000000E+00
1622	0.2400000E+00
1623	1.2700000E+09
1624	1.3000000E-04
1625	0.3500000E+00
1626	2.8000000E+00
1627	0.2770000E+00
1628	9.4000000E+08
1629	1.1000000E-04
1630	0.4900000E+00
1631	4.0000000E+01
1632	1.2000000E-02
1633	1.5000000E+06
1634	1.1000000E-04
1635	0.4000000E+00
1636	8.0000000E+00
1637	0.2100000E+00
1638	1.0000000E+06
1639	1.1000000E-04
1640	0.4000000E+00
1641	3.0000000E+00
1642	0.2100000E+00
1643	3.0000000E+05
1644	1.1000000E-04
1645	0.4000000E+00

1646	9.1200000E+01
1647	3.8500000E+00
1648	3.0000000E+01
1649	0.2100000E+00
1650	4.6858000E+08
1651	-1.6000000E+02
1652	1.5000000E+02
1653	4.9707000E+03
1654	2.0000000E+11
1655	1.2000000E-05
1656	3.0000000E-01
1657	5.9000000E+00
1658	6.0500000E+01
1659	3.4500000E+08
1660	9.0000000E-05
1661	0.4800000E+00
1662	5.0000000E+00
1663	0.2400000E+00
1664	1.2700000E+09
1665	1.3000000E-04
1666	0.3500000E+00
1667	2.8000000E+00
1668	0.2770000E+00
1669	9.4000000E+08
1670	9.0000000E-05
1671	0.4900000E+00
1672	4.0000000E+01
1673	1.2000000E-02
1674	1.5000000E+06
1675	1.1000000E-04
1676	0.4000000E+00
1677	8.0000000E+00
1678	0.2100000E+00
1679	1.0000000E+06
1680	1.1000000E-04
1681	0.4000000E+00
1682	3.0000000E+00
1683	0.2100000E+00
1684	3.0000000E+05
1685	1.1000000E-04
1686	0.4000000E+00
1687	9.1200000E+01
1688	3.8500000E+00
1689	3.0000000E+01
1690	0.2100000E+00
1691	4.6808000E+08

1692 -1.6000000E+02
1693 1.5000000E+02
1694 4.9707000E+03
1695 2.0000000E+11
1696 1.2000000E-05
1697 3.0000000E-01
1698 5.9000000E+00
1699 6.0500000E+01
1700 3.4500000E+08
1701 9.0000000E-05
1702 0.4800000E+00
1703 5.0000000E+00
1704 0.2400000E+00
1705 1.2700000E+09
1706 1.3000000E-04
1707 0.3500000E+00
1708 2.8000000E+00
1709 0.2770000E+00
1710 9.4000000E+08
1711 1.0000000E-04
1712 5.3900000E-01
1713 4.0000000E+01
1714 1.2000000E-02
1715 1.5000000E+06
1716 1.1000000E-04
1717 0.4000000E+00
1718 8.0000000E+00
1719 0.2100000E+00
1720 1.0000000E+06
1721 1.1000000E-04
1722 0.4000000E+00
1723 3.0000000E+00
1724 0.2100000E+00
1725 3.0000000E+05
1726 1.1000000E-04
1727 0.4000000E+00
1728 9.1200000E+01
1729 3.8500000E+00
1730 3.0000000E+01
1731 0.2100000E+00
1732 4.4393000E+08
1733 -1.6000000E+02
1734 1.5000000E+02
1735 4.9707000E+03
1736 2.0000000E+11
1737 1.2000000E-05

1738	3.0000000E-01
1739	5.9000000E+00
1740	6.0500000E+01
1741	3.4500000E+08
1742	9.0000000E-05
1743	0.4800000E+00
1744	5.0000000E+00
1745	0.2400000E+00
1746	1.2700000E+09
1747	1.3000000E-04
1748	0.3500000E+00
1749	2.8000000E+00
1750	0.2770000E+00
1751	9.4000000E+08
1752	1.0000000E-04
1753	4.4100000E-01
1754	4.0000000E+01
1755	1.2000000E-02
1756	1.5000000E+06
1757	1.1000000E-04
1758	0.4000000E+00
1759	8.0000000E+00
1760	0.2100000E+00
1761	1.0000000E+06
1762	1.1000000E-04
1763	0.4000000E+00
1764	3.0000000E+00
1765	0.2100000E+00
1766	3.0000000E+05
1767	1.1000000E-04
1768	0.4000000E+00
1769	9.1200000E+01
1770	3.8500000E+00
1771	3.0000000E+01
1772	0.2100000E+00
1773	4.4396000E+08
1774	-1.6000000E+02
1775	1.5000000E+02
1776	4.9707000E+03
1777	2.0000000E+11
1778	1.2000000E-05
1779	3.0000000E-01
1780	5.9000000E+00
1781	6.0500000E+01
1782	3.4500000E+08
1783	9.0000000E-05

1784	0.4800000E+00
1785	5.0000000E+00
1786	0.2400000E+00
1787	1.2700000E+09
1788	1.3000000E-04
1789	0.3500000E+00
1790	2.8000000E+00
1791	0.2770000E+00
1792	9.4000000E+08
1793	1.0000000E-04
1794	0.4900000E+00
1795	4.4000000E+01
1796	1.2000000E-02
1797	1.5000000E+06
1798	1.1000000E-04
1799	0.4000000E+00
1800	8.0000000E+00
1801	0.2100000E+00
1802	1.0000000E+06
1803	1.1000000E-04
1804	0.4000000E+00
1805	3.0000000E+00
1806	0.2100000E+00
1807	3.0000000E+05
1808	1.1000000E-04
1809	0.4000000E+00
1810	9.1200000E+01
1811	3.8500000E+00
1812	3.0000000E+01
1813	0.2100000E+00
1814	4.4409000E+08
1815	-1.6000000E+02
1816	1.5000000E+02
1817	4.9707000E+03
1818	2.0000000E+11
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1820	3.0000000E-01
1821	5.9000000E+00
1822	6.0500000E+01
1823	3.4500000E+08
1824	9.0000000E-05
1825	0.4800000E+00
1826	5.0000000E+00
1827	0.2400000E+00
1828	1.2700000E+09
1829	1.3000000E-04

1830	0.3500000E+00
1831	2.8000000E+00
1832	0.2770000E+00
1833	9.4000000E+08
1834	1.0000000E-04
1835	0.4900000E+00
1836	3.6000000E+01
1837	1.2000000E-02
1838	1.5000000E+06
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1842	0.2100000E+00
1843	1.0000000E+06
1844	1.1000000E-04
1845	0.4000000E+00
1846	3.0000000E+00
1847	0.2100000E+00
1848	3.0000000E+05
1849	1.1000000E-04
1850	0.4000000E+00
1851	9.1200000E+01
1852	3.8500000E+00
1853	3.0000000E+01
1854	0.2100000E+00
1855	4.4407000E+08
1856	-1.6000000E+02
1857	1.5000000E+02
1858	4.9707000E+03
1859	2.0000000E+11
1860	1.2000000E-05
1861	3.0000000E-01
1862	5.9000000E+00
1863	6.0500000E+01
1864	3.4500000E+08
1865	9.0000000E-05
1866	0.4800000E+00
1867	5.0000000E+00
1868	0.2400000E+00
1869	1.2700000E+09
1870	1.3000000E-04
1871	0.3500000E+00
1872	2.8000000E+00
1873	0.2770000E+00
1874	9.4000000E+08
1875	1.0000000E-04

1876	0.4900000E+00
1877	4.0000000E+01
1878	1.3200000E-02
1879	1.5000000E+06
1880	1.1000000E-04
1881	0.4000000E+00
1882	8.0000000E+00
1883	0.2100000E+00
1884	1.0000000E+06
1885	1.1000000E-04
1886	0.4000000E+00
1887	3.0000000E+00
1888	0.2100000E+00
1889	3.0000000E+05
1890	1.1000000E-04
1891	0.4000000E+00
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1893	3.8500000E+00
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1902	3.0000000E-01
1903	5.9000000E+00
1904	6.0500000E+01
1905	3.4500000E+08
1906	9.0000000E-05
1907	0.4800000E+00
1908	5.0000000E+00
1909	0.2400000E+00
1910	1.2700000E+09
1911	1.3000000E-04
1912	0.3500000E+00
1913	2.8000000E+00
1914	0.2770000E+00
1915	9.4000000E+08
1916	1.0000000E-04
1917	0.4900000E+00
1918	4.0000000E+01
1919	1.0800000E-02
1920	1.5000000E+06
1921	1.1000000E-04

1922	0.4000000E+00
1923	8.0000000E+00
1924	0.2100000E+00
1925	1.0000000E+06
1926	1.1000000E-04
1927	0.4000000E+00
1928	3.0000000E+00
1929	0.2100000E+00
1930	3.0000000E+05
1931	1.1000000E-04
1932	0.4000000E+00
1933	9.1200000E+01
1934	3.8500000E+00
1935	3.0000000E+01
1936	0.2100000E+00
1937	4.4407000E+08
1938	-1.6000000E+02
1939	1.5000000E+02
1940	4.9707000E+03
1941	2.0000000E+11
1942	1.2000000E-05
1943	3.0000000E-01
1944	5.9000000E+00
1945	6.0500000E+01
1946	3.4500000E+08
1947	9.0000000E-05
1948	0.4800000E+00
1949	5.0000000E+00
1950	0.2400000E+00
1951	1.2700000E+09
1952	1.3000000E-04
1953	0.3500000E+00
1954	2.8000000E+00
1955	0.2770000E+00
1956	9.4000000E+08
1957	1.0000000E-04
1958	0.4900000E+00
1959	4.0000000E+01
1960	1.2000000E-02
1961	1.6500000E+06
1962	1.1000000E-04
1963	0.4000000E+00
1964	8.0000000E+00
1965	0.2100000E+00
1966	1.0000000E+06
1967	1.1000000E-04

1968	0.4000000E+00
1969	3.0000000E+00
1970	0.2100000E+00
1971	3.0000000E+05
1972	1.1000000E-04
1973	0.4000000E+00
1974	9.1200000E+01
1975	3.8500000E+00
1976	3.0000000E+01
1977	0.2100000E+00
1978	4.4392000E+08
1979	-1.6000000E+02
1980	1.5000000E+02
1981	4.9707000E+03
1982	2.0000000E+11
1983	1.2000000E-05
1984	3.0000000E-01
1985	5.9000000E+00
1986	6.0500000E+01
1987	3.4500000E+08
1988	9.0000000E-05
1989	0.4800000E+00
1990	5.0000000E+00
1991	0.2400000E+00
1992	1.2700000E+09
1993	1.3000000E-04
1994	0.3500000E+00
1995	2.8000000E+00
1996	0.2770000E+00
1997	9.4000000E+08
1998	1.0000000E-04
1999	0.4900000E+00
2000	4.0000000E+01
2001	1.2000000E-02
2002	1.3500000E+06
2003	1.1000000E-04
2004	0.4000000E+00
2005	8.0000000E+00
2006	0.2100000E+00
2007	1.0000000E+06
2008	1.1000000E-04
2009	0.4000000E+00
2010	3.0000000E+00
2011	0.2100000E+00
2012	3.0000000E+05
2013	1.1000000E-04

2014	0.4000000E+00
2015	9.1200000E+01
2016	3.8500000E+00
2017	3.0000000E+01
2018	0.2100000E+00
2019	4.4392000E+08
2020	-1.6000000E+02
2021	1.5000000E+02
2022	4.9707000E+03
2023	2.0000000E+11
2024	1.2000000E-05
2025	3.0000000E-01
2026	5.9000000E+00
2027	6.0500000E+01
2028	3.4500000E+08
2029	9.0000000E-05
2030	0.4800000E+00
2031	5.0000000E+00
2032	0.2400000E+00
2033	1.2700000E+09
2034	1.3000000E-04
2035	0.3500000E+00
2036	2.8000000E+00
2037	0.2770000E+00
2038	9.4000000E+08
2039	1.0000000E-04
2040	0.4900000E+00
2041	4.0000000E+01
2042	1.2000000E-02
2043	1.5000000E+06
2044	1.2100000E-04
2045	0.4000000E+00
2046	8.0000000E+00
2047	0.2100000E+00
2048	1.0000000E+06
2049	1.1000000E-04
2050	0.4000000E+00
2051	3.0000000E+00
2052	0.2100000E+00
2053	3.0000000E+05
2054	1.1000000E-04
2055	0.4000000E+00
2056	9.1200000E+01
2057	3.8500000E+00
2058	3.0000000E+01
2059	0.2100000E+00

2060 4.4392000E+08
2061 -1.6000000E+02
2062 1.5000000E+02
2063 4.9707000E+03
2064 2.0000000E+11
2065 1.2000000E-05
2066 3.0000000E-01
2067 5.9000000E+00
2068 6.0500000E+01
2069 3.4500000E+08
2070 9.0000000E-05
2071 0.4800000E+00
2072 5.0000000E+00
2073 0.2400000E+00
2074 1.2700000E+09
2075 1.3000000E-04
2076 0.3500000E+00
2077 2.8000000E+00
2078 0.2770000E+00
2079 9.4000000E+08
2080 1.0000000E-04
2081 0.4900000E+00
2082 4.0000000E+01
2083 1.2000000E-02
2084 1.5000000E+06
2085 9.9000000E-05
2086 0.4000000E+00
2087 8.0000000E+00
2088 0.2100000E+00
2089 1.0000000E+06
2090 1.1000000E-04
2091 0.4000000E+00
2092 3.0000000E+00
2093 0.2100000E+00
2094 3.0000000E+05
2095 1.1000000E-04
2096 0.4000000E+00
2097 9.1200000E+01
2098 3.8500000E+00
2099 3.0000000E+01
2100 0.2100000E+00
2101 4.6883000E+08
2102 -1.6000000E+02
2103 1.5000000E+02
2104 4.9707000E+03
2105 2.0000000E+11

2106	1.2000000E-05
2107	3.0000000E-01
2108	5.9000000E+00
2109	6.0500000E+01
2110	3.4500000E+08
2111	9.0000000E-05
2112	0.4800000E+00
2113	5.0000000E+00
2114	0.2400000E+00
2115	1.2700000E+09
2116	1.3000000E-04
2117	0.3500000E+00
2118	2.8000000E+00
2119	0.2770000E+00
2120	9.4000000E+08
2121	1.0000000E-04
2122	0.4900000E+00
2123	4.0000000E+01
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2125	1.5000000E+06
2126	1.1000000E-04
2127	4.4000000E-01
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2129	0.2100000E+00
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2133	3.0000000E+00
2134	0.2100000E+00
2135	3.0000000E+05
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2143	-1.6000000E+02
2144	1.5000000E+02
2145	4.9707000E+03
2146	2.0000000E+11
2147	1.2000000E-05
2148	3.0000000E-01
2149	5.9000000E+00
2150	6.0500000E+01
2151	3.4500000E+08

2152	9.0000000E-05
2153	0.4800000E+00
2154	5.0000000E+00
2155	0.2400000E+00
2156	1.2700000E+09
2157	1.3000000E-04
2158	0.3500000E+00
2159	2.8000000E+00
2160	0.2770000E+00
2161	9.4000000E+08
2162	1.0000000E-04
2163	0.4900000E+00
2164	4.0000000E+01
2165	1.2000000E-02
2166	1.5000000E+06
2167	1.1000000E-04
2168	3.6000000E-01
2169	8.0000000E+00
2170	0.2100000E+00
2171	1.0000000E+06
2172	1.1000000E-04
2173	0.4000000E+00
2174	3.0000000E+00
2175	0.2100000E+00
2176	3.0000000E+05
2177	1.1000000E-04
2178	0.4000000E+00
2179	9.1200000E+01
2180	3.8500000E+00
2181	3.0000000E+01
2182	0.2100000E+00
2183	4.4392000E+08
2184	-1.6000000E+02
2185	1.5000000E+02
2186	4.9707000E+03
2187	2.0000000E+11
2188	1.2000000E-05
2189	3.0000000E-01
2190	5.9000000E+00
2191	6.0500000E+01
2192	3.4500000E+08
2193	9.0000000E-05
2194	0.4800000E+00
2195	5.0000000E+00
2196	0.2400000E+00
2197	1.2700000E+09

2198	1.3000000E-04
2199	0.3500000E+00
2200	2.8000000E+00
2201	0.2770000E+00
2202	9.4000000E+08
2203	1.0000000E-04
2204	0.4900000E+00
2205	4.0000000E+01
2206	1.2000000E-02
2207	1.5000000E+06
2208	1.1000000E-04
2209	0.4000000E+00
2210	8.8000000E+00
2211	0.2100000E+00
2212	1.0000000E+06
2213	1.1000000E-04
2214	0.4000000E+00
2215	3.0000000E+00
2216	0.2100000E+00
2217	3.0000000E+05
2218	1.1000000E-04
2219	0.4000000E+00
2220	9.1200000E+01
2221	3.8500000E+00
2222	3.0000000E+01
2223	0.2100000E+00
2224	4.4070000E+08
2225	-1.6000000E+02
2226	1.5000000E+02
2227	4.9707000E+03
2228	2.0000000E+11
2229	1.2000000E-05
2230	3.0000000E-01
2231	5.9000000E+00
2232	6.0500000E+01
2233	3.4500000E+08
2234	9.0000000E-05
2235	0.4800000E+00
2236	5.0000000E+00
2237	0.2400000E+00
2238	1.2700000E+09
2239	1.3000000E-04
2240	0.3500000E+00
2241	2.8000000E+00
2242	0.2770000E+00
2243	9.4000000E+08

2244	1.0000000E-04
2245	0.4900000E+00
2246	4.0000000E+01
2247	1.2000000E-02
2248	1.5000000E+06
2249	1.1000000E-04
2250	0.4000000E+00
2251	7.2000000E+00
2252	0.2100000E+00
2253	1.0000000E+06
2254	1.1000000E-04
2255	0.4000000E+00
2256	3.0000000E+00
2257	0.2100000E+00
2258	3.0000000E+05
2259	1.1000000E-04
2260	0.4000000E+00
2261	9.1200000E+01
2262	3.8500000E+00
2263	3.0000000E+01
2264	0.2100000E+00
2265	4.4070000E+08
2266	-1.6000000E+02
2267	1.5000000E+02
2268	4.9707000E+03
2269	2.0000000E+11
2270	1.2000000E-05
2271	3.0000000E-01
2272	5.9000000E+00
2273	6.0500000E+01
2274	3.4500000E+08
2275	9.0000000E-05
2276	0.4800000E+00
2277	5.0000000E+00
2278	0.2400000E+00
2279	1.2700000E+09
2280	1.3000000E-04
2281	0.3500000E+00
2282	2.8000000E+00
2283	0.2770000E+00
2284	9.4000000E+08
2285	1.0000000E-04
2286	0.4900000E+00
2287	4.0000000E+01
2288	1.2000000E-02
2289	1.5000000E+06

2290	1.1000000E-04
2291	0.4000000E+00
2292	8.0000000E+00
2293	2.3100000E-01
2294	1.0000000E+06
2295	1.1000000E-04
2296	0.4000000E+00
2297	3.0000000E+00
2298	0.2100000E+00
2299	3.0000000E+05
2300	1.1000000E-04
2301	0.4000000E+00
2302	9.1200000E+01
2303	3.8500000E+00
2304	3.0000000E+01
2305	0.2100000E+00
2306	4.4392000E+08
2307	-1.6000000E+02
2308	1.5000000E+02
2309	4.9707000E+03
2310	2.0000000E+11
2311	1.2000000E-05
2312	3.0000000E-01
2313	5.9000000E+00
2314	6.0500000E+01
2315	3.4500000E+08
2316	9.0000000E-05
2317	0.4800000E+00
2318	5.0000000E+00
2319	0.2400000E+00
2320	1.2700000E+09
2321	1.3000000E-04
2322	0.3500000E+00
2323	2.8000000E+00
2324	0.2770000E+00
2325	9.4000000E+08
2326	1.0000000E-04
2327	0.4900000E+00
2328	4.0000000E+01
2329	1.2000000E-02
2330	1.5000000E+06
2331	1.1000000E-04
2332	0.4000000E+00
2333	8.0000000E+00
2334	1.8900000E-01
2335	1.0000000E+06

2336	1.1000000E-04
2337	0.4000000E+00
2338	3.0000000E+00
2339	0.2100000E+00
2340	3.0000000E+05
2341	1.1000000E-04
2342	0.4000000E+00
2343	9.1200000E+01
2344	3.8500000E+00
2345	3.0000000E+01
2346	0.2100000E+00
2347	4.4393000E+08
2348	-1.6000000E+02
2349	1.5000000E+02
2350	4.9707000E+03
2351	2.0000000E+11
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2353	3.0000000E-01
2354	5.9000000E+00
2355	6.0500000E+01
2356	3.4500000E+08
2357	9.0000000E-05
2358	0.4800000E+00
2359	5.0000000E+00
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2362	1.3000000E-04
2363	0.3500000E+00
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2369	4.0000000E+01
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2371	1.5000000E+06
2372	1.1000000E-04
2373	0.4000000E+00
2374	8.0000000E+00
2375	0.2100000E+00
2376	1.1000000E+06
2377	1.1000000E-04
2378	0.4000000E+00
2379	3.0000000E+00
2380	0.2100000E+00
2381	3.0000000E+05

2382	1.1000000E-04
2383	0.4000000E+00
2384	9.1200000E+01
2385	3.8500000E+00
2386	3.0000000E+01
2387	0.2100000E+00
2388	4.4392000E+08
2389	-1.6000000E+02
2390	1.5000000E+02
2391	4.9707000E+03
2392	2.0000000E+11
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2394	3.0000000E-01
2395	5.9000000E+00
2396	6.0500000E+01
2397	3.4500000E+08
2398	9.0000000E-05
2399	0.4800000E+00
2400	5.0000000E+00
2401	0.2400000E+00
2402	1.2700000E+09
2403	1.3000000E-04
2404	0.3500000E+00
2405	2.8000000E+00
2406	0.2770000E+00
2407	9.4000000E+08
2408	1.0000000E-04
2409	0.4900000E+00
2410	4.0000000E+01
2411	1.2000000E-02
2412	1.5000000E+06
2413	1.1000000E-04
2414	0.4000000E+00
2415	8.0000000E+00
2416	0.2100000E+00
2417	9.0000000E+05
2418	1.1000000E-04
2419	0.4000000E+00
2420	3.0000000E+00
2421	0.2100000E+00
2422	3.0000000E+05
2423	1.1000000E-04
2424	0.4000000E+00
2425	9.1200000E+01
2426	3.8500000E+00
2427	3.0000000E+01

2428 0.2100000E+00
2429 4.4392000E+08
2430 -1.6000000E+02
2431 1.5000000E+02
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2434 1.2000000E-05
2435 3.0000000E-01
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2437 6.0500000E+01
2438 3.4500000E+08
2439 9.0000000E-05
2440 0.4800000E+00
2441 5.0000000E+00
2442 0.2400000E+00
2443 1.2700000E+09
2444 1.3000000E-04
2445 0.3500000E+00
2446 2.8000000E+00
2447 0.2770000E+00
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2452 1.2000000E-02
2453 1.5000000E+06
2454 1.1000000E-04
2455 0.4000000E+00
2456 8.0000000E+00
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2458 1.0000000E+06
2459 1.2100000E-04
2460 0.4000000E+00
2461 3.0000000E+00
2462 0.2100000E+00
2463 3.0000000E+05
2464 1.1000000E-04
2465 0.4000000E+00
2466 9.1200000E+01
2467 3.8500000E+00
2468 3.0000000E+01
2469 0.2100000E+00
2470 4.6883000E+08
2471 -1.6000000E+02
2472 1.5000000E+02
2473 4.9707000E+03

2474	2.0000000E+11
2475	1.2000000E-05
2476	3.0000000E-01
2477	5.9000000E+00
2478	6.0500000E+01
2479	3.4500000E+08
2480	9.0000000E-05
2481	0.4800000E+00
2482	5.0000000E+00
2483	0.2400000E+00
2484	1.2700000E+09
2485	1.3000000E-04
2486	0.3500000E+00
2487	2.8000000E+00
2488	0.2770000E+00
2489	9.4000000E+08
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2491	0.4900000E+00
2492	4.0000000E+01
2493	1.2000000E-02
2494	1.5000000E+06
2495	1.1000000E-04
2496	0.4000000E+00
2497	8.0000000E+00
2498	0.2100000E+00
2499	1.0000000E+06
2500	9.9000000E-05
2501	0.4000000E+00
2502	3.0000000E+00
2503	0.2100000E+00
2504	3.0000000E+05
2505	1.1000000E-04
2506	0.4000000E+00
2507	9.1200000E+01
2508	3.8500000E+00
2509	3.0000000E+01
2510	0.2100000E+00
2511	4.6883000E+08
2512	-1.6000000E+02
2513	1.5000000E+02
2514	4.9707000E+03
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2517	3.0000000E-01
2518	5.9000000E+00
2519	6.0500000E+01

2520	3.4500000E+08
2521	9.0000000E-05
2522	0.4800000E+00
2523	5.0000000E+00
2524	0.2400000E+00
2525	1.2700000E+09
2526	1.3000000E-04
2527	0.3500000E+00
2528	2.8000000E+00
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2566 1.2700000E+09
2567 1.3000000E-04
2568 0.3500000E+00
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2571 9.4000000E+08
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2575 1.2000000E-02
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2596 4.9707000E+03
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2598 1.2000000E-05
2599 3.0000000E-01
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2601 6.0500000E+01
2602 3.4500000E+08
2603 9.0000000E-05
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2605 5.0000000E+00
2606 0.2400000E+00
2607 1.2700000E+09
2608 1.3000000E-04
2609 0.3500000E+00
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2626 0.2100000E+00
2627 3.0000000E+05
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2631 3.8500000E+00
2632 3.0000000E+01
2633 0.2100000E+00
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2635 -1.6000000E+02
2636 1.5000000E+02
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2638 2.0000000E+11
2639 1.2000000E-05
2640 3.0000000E-01
2641 5.9000000E+00
2642 6.0500000E+01
2643 3.4500000E+08
2644 9.0000000E-05
2645 0.4800000E+00
2646 5.0000000E+00
2647 0.2400000E+00
2648 1.2700000E+09
2649 1.3000000E-04
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2672 3.8500000E+00
2673 3.0000000E+01
2674 0.2100000E+00
2675 4.4070000E+08
2676 -1.6000000E+02
2677 1.5000000E+02
2678 4.9707000E+03
2679 2.0000000E+11
2680 1.2000000E-05
2681 3.0000000E-01
2682 5.9000000E+00
2683 6.0500000E+01
2684 3.4500000E+08
2685 9.0000000E-05
2686 0.4800000E+00
2687 5.0000000E+00
2688 0.2400000E+00
2689 1.2700000E+09
2690 1.3000000E-04
2691 0.3500000E+00
2692 2.8000000E+00
2693 0.2770000E+00
2694 9.4000000E+08
2695 1.0000000E-04
2696 0.4900000E+00
2697 4.0000000E+01
2698 1.2000000E-02
2699 1.5000000E+06
2700 1.1000000E-04
2701 0.4000000E+00
2702 8.0000000E+00
2703 0.2100000E+00

2704	1.0000000E+06
2705	1.1000000E-04
2706	0.4000000E+00
2707	3.0000000E+00
2708	0.2310000E+00
2709	3.0000000E+05
2710	1.1000000E-04
2711	0.4000000E+00
2712	9.1200000E+01
2713	3.8500000E+00
2714	3.0000000E+01
2715	0.2100000E+00
2716	4.4396000E+08
2717	-1.6000000E+02
2718	1.5000000E+02
2719	4.9707000E+03
2720	2.0000000E+11
2721	1.2000000E-05
2722	3.0000000E-01
2723	5.9000000E+00
2724	6.0500000E+01
2725	3.4500000E+08
2726	9.0000000E-05
2727	0.4800000E+00
2728	5.0000000E+00
2729	0.2400000E+00
2730	1.2700000E+09
2731	1.3000000E-04
2732	0.3500000E+00
2733	2.8000000E+00
2734	0.2770000E+00
2735	9.4000000E+08
2736	1.0000000E-04
2737	0.4900000E+00
2738	4.0000000E+01
2739	1.2000000E-02
2740	1.5000000E+06
2741	1.1000000E-04
2742	0.4000000E+00
2743	8.0000000E+00
2744	0.2100000E+00
2745	1.0000000E+06
2746	1.1000000E-04
2747	0.4000000E+00
2748	3.0000000E+00
2749	0.1890000E+00

2750	3.0000000E+05
2751	1.1000000E-04
2752	0.4000000E+00
2753	9.1200000E+01
2754	3.8500000E+00
2755	3.0000000E+01
2756	0.2100000E+00
2757	4.4392000E+08
2758	-1.6000000E+02
2759	1.5000000E+02
2760	4.9707000E+03
2761	2.0000000E+11
2762	1.2000000E-05
2763	3.0000000E-01
2764	5.9000000E+00
2765	6.0500000E+01
2766	3.4500000E+08
2767	9.0000000E-05
2768	0.4800000E+00
2769	5.0000000E+00
2770	0.2400000E+00
2771	1.2700000E+09
2772	1.3000000E-04
2773	0.3500000E+00
2774	2.8000000E+00
2775	0.2770000E+00
2776	9.4000000E+08
2777	1.0000000E-04
2778	0.4900000E+00
2779	4.0000000E+01
2780	1.2000000E-02
2781	1.5000000E+06
2782	1.1000000E-04
2783	0.4000000E+00
2784	8.0000000E+00
2785	0.2100000E+00
2786	1.0000000E+06
2787	1.1000000E-04
2788	0.4000000E+00
2789	3.0000000E+00
2790	0.2100000E+00
2791	3.3000000E+05
2792	1.1000000E-04
2793	0.4000000E+00
2794	9.1200000E+01
2795	3.8500000E+00

2796	3.0000000E+01
2797	0.2100000E+00
2798	4.4392000E+08
2799	-1.6000000E+02
2800	1.5000000E+02
2801	4.9707000E+03
2802	2.0000000E+11
2803	1.2000000E-05
2804	3.0000000E-01
2805	5.9000000E+00
2806	6.0500000E+01
2807	3.4500000E+08
2808	9.0000000E-05
2809	0.4800000E+00
2810	5.0000000E+00
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2820	4.0000000E+01
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2822	1.5000000E+06
2823	1.1000000E-04
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2825	8.0000000E+00
2826	0.2100000E+00
2827	1.0000000E+06
2828	1.1000000E-04
2829	0.4000000E+00
2830	3.0000000E+00
2831	0.2100000E+00
2832	2.7000000E+05
2833	1.1000000E-04
2834	0.4000000E+00
2835	9.1200000E+01
2836	3.8500000E+00
2837	3.0000000E+01
2838	0.2100000E+00
2839	4.4392000E+08
2840	-1.6000000E+02
2841	1.5000000E+02

2842	4.9707000E+03
2843	2.0000000E+11
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2845	3.0000000E-01
2846	5.9000000E+00
2847	6.0500000E+01
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2851	5.0000000E+00
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2853	1.2700000E+09
2854	1.3000000E-04
2855	0.3500000E+00
2856	2.8000000E+00
2857	0.2770000E+00
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2861	4.0000000E+01
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2863	1.5000000E+06
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2865	0.4000000E+00
2866	8.0000000E+00
2867	0.2100000E+00
2868	1.0000000E+06
2869	1.1000000E-04
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2871	3.0000000E+00
2872	0.2100000E+00
2873	3.0000000E+05
2874	1.2100000E-04
2875	0.4000000E+00
2876	9.1200000E+01
2877	3.8500000E+00
2878	3.0000000E+01
2879	0.2100000E+00
2880	4.6883000E+08
2881	-1.6000000E+02
2882	1.5000000E+02
2883	4.9707000E+03
2884	2.0000000E+11
2885	1.2000000E-05
2886	3.0000000E-01
2887	5.9000000E+00

2888	6.0500000E+01
2889	3.4500000E+08
2890	9.0000000E-05
2891	0.4800000E+00
2892	5.0000000E+00
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2902	4.0000000E+01
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2904	1.5000000E+06
2905	1.1000000E-04
2906	0.4000000E+00
2907	8.0000000E+00
2908	0.2100000E+00
2909	1.0000000E+06
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2913	0.2100000E+00
2914	3.0000000E+05
2915	9.9000000E-05
2916	0.4000000E+00
2917	9.1200000E+01
2918	3.8500000E+00
2919	3.0000000E+01
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2921	4.6883000E+08
2922	-1.6000000E+02
2923	1.5000000E+02
2924	4.9707000E+03
2925	2.0000000E+11
2926	1.2000000E-05
2927	3.0000000E-01
2928	5.9000000E+00
2929	6.0500000E+01
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2931	9.0000000E-05
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2933	5.0000000E+00

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2939	0.2770000E+00
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2941	1.0000000E-04
2942	0.4900000E+00
2943	4.0000000E+01
2944	1.2000000E-02
2945	1.5000000E+06
2946	1.1000000E-04
2947	0.4000000E+00
2948	8.0000000E+00
2949	0.2100000E+00
2950	1.0000000E+06
2951	1.1000000E-04
2952	0.4000000E+00
2953	3.0000000E+00
2954	0.2100000E+00
2955	3.0000000E+05
2956	1.1000000E-04
2957	4.4000000E-01
2958	9.1200000E+01
2959	3.8500000E+00
2960	3.0000000E+01
2961	0.2100000E+00
2962	4.4392000E+08
2963	-1.6000000E+02
2964	1.5000000E+02
2965	4.9707000E+03
2966	2.0000000E+11
2967	1.2000000E-05
2968	3.0000000E-01
2969	5.9000000E+00
2970	6.0500000E+01
2971	3.4500000E+08
2972	9.0000000E-05
2973	0.4800000E+00
2974	5.0000000E+00
2975	0.2400000E+00
2976	1.2700000E+09
2977	1.3000000E-04
2978	0.3500000E+00
2979	2.8000000E+00

2980	0.2770000E+00
2981	9.4000000E+08
2982	1.0000000E-04
2983	0.4900000E+00
2984	4.0000000E+01
2985	1.2000000E-02
2986	1.5000000E+06
2987	1.1000000E-04
2988	0.4000000E+00
2989	8.0000000E+00
2990	0.2100000E+00
2991	1.0000000E+06
2992	1.1000000E-04
2993	0.4000000E+00
2994	3.0000000E+00
2995	0.2100000E+00
2996	3.0000000E+05
2997	1.1000000E-04
2998	3.6000000E-01
2999	9.1200000E+01
3000	3.8500000E+00
3001	3.0000000E+01
3002	0.2100000E+00
3003	4.4392000E+08
3004	-1.6000000E+02
3005	1.5000000E+02
3006	4.9707000E+03
3007	2.0000000E+11
3008	1.2000000E-05
3009	3.0000000E-01
3010	5.9000000E+00
3011	6.0500000E+01
3012	3.4500000E+08
3013	9.0000000E-05
3014	0.4800000E+00
3015	5.0000000E+00
3016	0.2400000E+00
3017	1.2700000E+09
3018	1.3000000E-04
3019	0.3500000E+00
3020	2.8000000E+00
3021	0.2770000E+00
3022	9.4000000E+08
3023	1.0000000E-04
3024	0.4900000E+00
3025	4.0000000E+01

3026	1.2000000E-02
3027	1.5000000E+06
3028	1.1000000E-04
3029	0.4000000E+00
3030	8.0000000E+00
3031	0.2100000E+00
3032	1.0000000E+06
3033	1.1000000E-04
3034	0.4000000E+00
3035	3.0000000E+00
3036	0.2100000E+00
3037	3.0000000E+05
3038	1.1000000E-04
3039	0.4000000E+00
3040	1.0032000E+02
3041	3.8500000E+00
3042	3.0000000E+01
3043	0.2100000E+00
3044	4.4070000E+08
3045	-1.6000000E+02
3046	1.5000000E+02
3047	4.9707000E+03
3048	2.0000000E+11
3049	1.2000000E-05
3050	3.0000000E-01
3051	5.9000000E+00
3052	6.0500000E+01
3053	3.4500000E+08
3054	9.0000000E-05
3055	0.4800000E+00
3056	5.0000000E+00
3057	0.2400000E+00
3058	1.2700000E+09
3059	1.3000000E-04
3060	0.3500000E+00
3061	2.8000000E+00
3062	0.2770000E+00
3063	9.4000000E+08
3064	1.0000000E-04
3065	0.4900000E+00
3066	4.0000000E+01
3067	1.2000000E-02
3068	1.5000000E+06
3069	1.1000000E-04
3070	0.4000000E+00
3071	8.0000000E+00

3072	0.2100000E+00
3073	1.0000000E+06
3074	1.1000000E-04
3075	0.4000000E+00
3076	3.0000000E+00
3077	0.2100000E+00
3078	3.0000000E+05
3079	1.1000000E-04
3080	0.4000000E+00
3081	8.2080000E+01
3082	3.8500000E+00
3083	3.0000000E+01
3084	0.2100000E+00
3085	4.4010000E+08
3086	-1.6000000E+02
3087	1.5000000E+02
3088	4.9707000E+03
3089	2.0000000E+11
3090	1.2000000E-05
3091	3.0000000E-01
3092	5.9000000E+00
3093	6.0500000E+01
3094	3.4500000E+08
3095	9.0000000E-05
3096	0.4800000E+00
3097	5.0000000E+00
3098	0.2400000E+00
3099	1.2700000E+09
3100	1.3000000E-04
3101	0.3500000E+00
3102	2.8000000E+00
3103	0.2770000E+00
3104	9.4000000E+08
3105	1.0000000E-04
3106	0.4900000E+00
3107	4.0000000E+01
3108	1.2000000E-02
3109	1.5000000E+06
3110	1.1000000E-04
3111	0.4000000E+00
3112	8.0000000E+00
3113	0.2100000E+00
3114	1.0000000E+06
3115	1.1000000E-04
3116	0.4000000E+00
3117	3.0000000E+00

3118	0.2100000E+00
3119	3.0000000E+05
3120	1.1000000E-04
3121	0.4000000E+00
3122	9.1200000E+01
3123	4.2350000E+00
3124	3.0000000E+01
3125	0.2100000E+00
3126	4.4392000E+08
3127	-1.6000000E+02
3128	1.5000000E+02
3129	4.9707000E+03
3130	2.0000000E+11
3131	1.2000000E-05
3132	3.0000000E-01
3133	5.9000000E+00
3134	6.0500000E+01
3135	3.4500000E+08
3136	9.0000000E-05
3137	0.4800000E+00
3138	5.0000000E+00
3139	0.2400000E+00
3140	1.2700000E+09
3141	1.3000000E-04
3142	0.3500000E+00
3143	2.8000000E+00
3144	0.2770000E+00
3145	9.4000000E+08
3146	1.0000000E-04
3147	0.4900000E+00
3148	4.0000000E+01
3149	1.2000000E-02
3150	1.5000000E+06
3151	1.1000000E-04
3152	0.4000000E+00
3153	8.0000000E+00
3154	0.2100000E+00
3155	1.0000000E+06
3156	1.1000000E-04
3157	0.4000000E+00
3158	3.0000000E+00
3159	0.2100000E+00
3160	3.0000000E+05
3161	1.1000000E-04
3162	0.4000000E+00
3163	9.1200000E+01

3164 3.4650000E+00
3165 3.0000000E+01
3166 0.2100000E+00
3167 4.4392000E+08
3168 -1.6000000E+02
3169 1.5000000E+02
3170 4.9707000E+03
3171 2.0000000E+11
3172 1.2000000E-05
3173 3.0000000E-01
3174 5.9000000E+00
3175 6.0500000E+01
3176 3.4500000E+08
3177 9.0000000E-05
3178 0.4800000E+00
3179 5.0000000E+00
3180 0.2400000E+00
3181 1.2700000E+09
3182 1.3000000E-04
3183 0.3500000E+00
3184 2.8000000E+00
3185 0.2770000E+00
3186 9.4000000E+08
3187 1.0000000E-04
3188 0.4900000E+00
3189 4.0000000E+01
3190 1.2000000E-02
3191 1.5000000E+06
3192 1.1000000E-04
3193 0.4000000E+00
3194 8.0000000E+00
3195 0.2100000E+00
3196 1.0000000E+06
3197 1.1000000E-04
3198 0.4000000E+00
3199 3.0000000E+00
3200 0.2100000E+00
3201 3.0000000E+05
3202 1.1000000E-04
3203 0.4000000E+00
3204 9.1200000E+01
3205 3.8500000E+00
3206 3.3000000E+01
3207 0.2100000E+00
3208 4.4390000E+08
3209 -1.6000000E+02

3210	1.5000000E+02
3211	4.9707000E+03
3212	2.0000000E+11
3213	1.2000000E-05
3214	3.0000000E-01
3215	5.9000000E+00
3216	6.0500000E+01
3217	3.4500000E+08
3218	9.0000000E-05
3219	0.4800000E+00
3220	5.0000000E+00
3221	0.2400000E+00
3222	1.2700000E+09
3223	1.3000000E-04
3224	0.3500000E+00
3225	2.8000000E+00
3226	0.2770000E+00
3227	9.4000000E+08
3228	1.0000000E-04
3229	0.4900000E+00
3230	4.0000000E+01
3231	1.2000000E-02
3232	1.5000000E+06
3233	1.1000000E-04
3234	0.4000000E+00
3235	8.0000000E+00
3236	0.2100000E+00
3237	1.0000000E+06
3238	1.1000000E-04
3239	0.4000000E+00
3240	3.0000000E+00
3241	0.2100000E+00
3242	3.0000000E+05
3243	1.1000000E-04
3244	0.4000000E+00
3245	9.1200000E+01
3246	3.8500000E+00
3247	2.7000000E+01
3248	0.2100000E+00
3249	4.4390000E+08
3250	-1.6000000E+02
3251	1.5000000E+02
3252	4.9707000E+03
3253	2.0000000E+11
3254	1.2000000E-05
3255	3.0000000E-01

3256	5.9000000E+00
3257	6.0500000E+01
3258	3.4500000E+08
3259	9.0000000E-05
3260	0.4800000E+00
3261	5.0000000E+00
3262	0.2400000E+00
3263	1.2700000E+09
3264	1.3000000E-04
3265	0.3500000E+00
3266	2.8000000E+00
3267	0.2770000E+00
3268	9.4000000E+08
3269	1.0000000E-04
3270	0.4900000E+00
3271	4.0000000E+01
3272	1.2000000E-02
3273	1.5000000E+06
3274	1.1000000E-04
3275	0.4000000E+00
3276	8.0000000E+00
3277	0.2100000E+00
3278	1.0000000E+06
3279	1.1000000E-04
3280	0.4000000E+00
3281	3.0000000E+00
3282	0.2100000E+00
3283	3.0000000E+05
3284	1.1000000E-04
3285	0.4000000E+00
3286	9.1200000E+01
3287	3.8500000E+00
3288	3.0000000E+01
3289	0.2310000E+00
3290	4.4392000E+08
3291	-1.6000000E+02
3292	1.5000000E+02
3293	4.9707000E+03
3294	2.0000000E+11
3295	1.2000000E-05
3296	3.0000000E-01
3297	5.9000000E+00
3298	6.0500000E+01
3299	3.4500000E+08
3300	9.0000000E-05
3301	0.4800000E+00

```
3302    5.0000000E+00
3303    0.2400000E+00
3304    1.2700000E+09
3305    1.3000000E-04
3306    0.3500000E+00
3307    2.8000000E+00
3308    0.2770000E+00
3309    9.4000000E+08
3310    1.0000000E-04
3311    0.4900000E+00
3312    4.0000000E+01
3313    1.2000000E-02
3314    1.5000000E+06
3315    1.1000000E-04
3316    0.4000000E+00
3317    8.0000000E+00
3318    0.2100000E+00
3319    1.0000000E+06
3320    1.1000000E-04
3321    0.4000000E+00
3322    3.0000000E+00
3323    0.2100000E+00
3324    3.0000000E+05
3325    1.1000000E-04
3326    0.4000000E+00
3327    9.1200000E+01
3328    3.8500000E+00
3329    3.0000000E+01
3330    0.1890000E+00
3331    4.2660000E+08
3332  *DEFRANV
3333  T0
3334     -1.600000E+02     -1.600000E+01      0.200000E+01
3335  P0
3336      1.500000E+02      1.500000E+01      0.200000E+01
3337  h0
3338      4.970700E+03      4.970700E+02      0.200000E+01
3339  E1
3340      2.000000E+11      2.000000E+10      0.200000E+01
3341  A1
3342      1.200000E-05      1.200000E-06      0.200000E+01
3343  PR1
3344      3.000000E-01      3.000000E-02      0.200000E+01
3345  t1
3346      5.900000E+00      5.900000E-01      0.200000E+01
3347  k1
```

3348 6.050000E+01 6.050000E+00 0.200000E+01
3349 E2
3350 3.450000E+08 3.450000E+07 0.200000E+01
3351 A2
3352 9.000000E-05 9.000000E-06 0.200000E+01
3353 PR2
3354 0.480000E+00 0.480000E-01 0.200000E+01
3355 t2
3356 5.000000E+00 5.000000E-01 0.200000E+01
3357 k2
3358 0.240000E+00 0.240000E-01 0.200000E+01
3359 E3
3360 1.270000E+09 1.270000E+08 0.200000E+01
3361 A3
3362 1.300000E-04 1.300000E-05 0.200000E+01
3363 PR3
3364 0.350000E+00 0.350000E-01 0.200000E+01
3365 t3
3366 2.800000E+00 2.800000E-01 0.200000E+01
3367 k3
3368 0.277000E+00 0.277000E-01 0.200000E+01
3369 E4
3370 9.400000E+08 9.400000E+07 0.200000E+01
3371 A4
3372 1.000000E-04 1.000000E-05 0.200000E+01
3373 PR4
3374 0.490000E+00 0.490000E-01 0.200000E+01
3375 t4
3376 4.000000E+01 4.000000E+00 0.200000E+01
3377 k4
3378 1.200000E-02 1.200000E-03 0.200000E+01
3379 E5
3380 1.500000E+06 1.500000E+05 0.200000E+01
3381 A5
3382 1.100000E-04 1.100000E-05 0.200000E+01
3383 PR5
3384 0.400000E+00 0.400000E-01 0.200000E+01
3385 t5
3386 8.000000E+00 8.000000E-01 0.200000E+01
3387 k5
3388 0.210000E+00 0.210000E-01 0.200000E+01
3389 E6
3390 1.000000E+06 1.000000E+05 0.200000E+01
3391 A6
3392 1.100000E-04 1.100000E-05 0.200000E+01
3393 PR6

```
3394    0.400000E+00      0.400000E-01      0.200000E+01
3395  t6
3396    3.000000E+00      3.000000E-01      0.200000E+01
3397  k6
3398    0.210000E+00      0.210000E-01      0.200000E+01
3399  E7
3400    3.000000E+05      3.000000E+04      0.200000E+01
3401  A7
3402    1.100000E-04      1.100000E-05      0.200000E+01
3403  PR7
3404    0.400000E+00      0.400000E-01      0.200000E+01
3405  t7
3406    9.120000E+01      9.120000E+00      0.200000E+01
3407  k7
3408    3.850000E+00      3.850000E-01      0.200000E+01
3409  Tinf
3410    3.000000E+01      3.000000E+00      0.200000E+01
3411  hinf
3412    0.210000E+00      0.210000E-01      0.200000E+01
3413  *PLEVELS  11
3414    0.001  .01  0.1  0.2  0.4  0.6   0.8   0.9  0.95 0.99  0.999
3415  *END
```

```
================================================================================
                *****    PARAMETER INTERPRETATION    *****
================================================================================
```

Problem Title: LNG HOSE

Number of Random Variables: 40

Type of Response (G) Function Approximation:
2 = Quadratic Response Function
At least 81 datasets are necessary in the *DATASETS option
in the model data input

Number of Datasets: 81
This must coincide with the *DATASETS option in the model data input

Solution Technique:
1 = Advanced first order reliability method
Computes both first order reliability method and advanced
first order reliability method

Analysis Type:
2 = User-defined probability levels (P-levels)
*PLEVELS keyword is required in model input data
Time consuming analysis because of iteration procedures

==========

***** MODEL INTERPRETATION *****

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Problem Title: LNG HOSE

User-Defined Response Function Z-levels:

Number	Z-Level
1	0.0000

User-Defined Probability P-levels:

Number	P-Level
1	0.10000E-02
2	0.10000E-01
3	0.10000
4	0.20000
5	0.40000
6	0.60000
7	0.80000
8	0.90000
9	0.95000
10	0.99000
11	0.99900

Random Variable Statistics:

Random Variable	Distribution	Mean	Standard Deviation
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11

A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

Response Function Datasets :

Dataset = 1

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7

E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44390E+09

Dataset = 2

Random Variable	Input Value
T0	-176.00
P0	150.00

H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.48305E+09

Dataset = 3

Random Variable	Input Value
T0	-144.00

P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.40480E+09

Dataset = 4

Random Variable	Input Value
+	

T0	-160.00
P0	165.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44382E+09

Dataset = 5

Random Variable	Input Value

T0	-160.00
P0	135.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44030E+09

Dataset = 6

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	5467.8
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44401E+09

Dataset = 7

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4473.6
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44324E+09

Dataset = 8

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.22000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.48826E+09

Dataset = 9

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.18000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.39956E+09

Dataset = 10

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.13200E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.50297E+09

Dataset = 11

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.10800E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000

HINF 0.21000

Response = 0.43656E+09

Dataset = 12

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.33000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500

TINF	30.000
HINF	0.21000

Response = 0.44329E+09

Dataset = 13

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.27000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200

K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44450E+09

Dataset = 14

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	6.4900
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000

T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44394E+09

Dataset = 15

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.3100
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03

PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44409E+09

Dataset = 16

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	66.550
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06

A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44393E+09

Dataset = 17

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	54.450
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000

E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44396E+09

Dataset = 18

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.37950E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000

K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44410E+09

Dataset = 19

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.31050E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000

T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44372E+09

Dataset = 20

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.99000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03

PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.48350E+09

Dataset = 21

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.81000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07

A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.45607E+09

Dataset = 22

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.52800
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000

E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44100E+09

Dataset = 23

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.43200
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000

K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44065E+09

Dataset = 24

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.5000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000

T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44409E+09

Dataset = 25

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	4.5000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03

PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44090E+09

Dataset = 26

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.26400
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07

A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44406E+09

Dataset = 27

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.21600
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01

E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44375E+09

Dataset = 28

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.13970E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000

K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 29

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.11430E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000

T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44372E+09

Dataset = 30

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.14300E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03

PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46870E+09

Dataset = 31

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.11700E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09

A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46895E+09

Dataset = 32

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.38500
T3	2.8000
K3	0.27700

E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44391E+09

Dataset = 33

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.31500
T3	2.8000

K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44393E+09

Dataset = 34

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000

T3	3.0800
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44409E+09

Dataset = 35

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03

PR3	0.35000
T3	2.5200
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44410E+09

Dataset = 36

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10

A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.30470
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 37

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000

E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.24930
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 38

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000

K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.10340E+10
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44389E+09

Dataset = 39

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000

T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.84600E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44396E+09

Dataset = 40

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04

PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.11000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46858E+09

Dataset = 41

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09

A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.90000E-04
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46808E+09

Dataset = 42

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500

E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.53900
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44393E+09

Dataset = 43

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000

K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.44100
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44396E+09

Dataset = 44

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000

T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	44.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44409E+09

Dataset = 45

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04

PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	36.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44407E+09

Dataset = 46

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12

A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.13200E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44378E+09

Dataset = 47

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7

E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.10800E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44407E+09

Dataset = 48

Random Variable	Input Value
T0	-160.00
P0	150.00

H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.16500E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 49

Random Variable	Input Value
T0	-160.00

P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.13500E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 50

Random Variable	Input Value

+

T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.12100E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 51

Random Variable	Input Value

T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.99000E-04
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46883E+09

Dataset = 52

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.44000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 53

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.36000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 54

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.8000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44070E+09

Dataset = 55

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	7.2000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44070E+09

Dataset = 56

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.23100
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 57

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.18900
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000

HINF 0.21000

Response = 0.44393E+09

Dataset = 58

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.11000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500

TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 59

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.90000E+06
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200

K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 60

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.12100E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000

T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46883E+09

Dataset = 61

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.99000E-04
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03

PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46883E+09

Dataset = 62

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.44000
T6	3.0000
K6	0.21000
E7	0.30000E+06

A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 63

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.36000
T6	3.0000
K6	0.21000

E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 64

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.1000

K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44070E+09

Dataset = 65

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000

T6	2.7000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44070E+09

Dataset = 66

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03

PR6	0.40000
T6	3.0000
K6	0.23100
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44396E+09

Dataset = 67

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07

A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.18900
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 68

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000

E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.33000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 69

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000

K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.27000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 70

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000

T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.12100E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46883E+09

Dataset = 71

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03

PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.99000E-04
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.46883E+09

Dataset = 72

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07

A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.44000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 73

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01

E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.36000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 74

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000

K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	100.32
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44070E+09

Dataset = 75

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000

T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	82.080
K7	3.8500
TINF	30.000
HINF	0.21000

Response = 0.44010E+09

Dataset = 76

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03

PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	4.2350
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 77

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09

A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.4650
TINF	30.000
HINF	0.21000

Response = 0.44392E+09

Dataset = 78

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000
K3	0.27700

E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	33.000
HINF	0.21000

Response = 0.44390E+09

Dataset = 79

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000
T3	2.8000

K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	27.000
HINF	0.21000

Response = 0.44390E+09

Dataset = 80

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03
PR3	0.35000

T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.23100

Response = 0.44392E+09

Dataset = 81

Random Variable	Input Value
T0	-160.00
P0	150.00
H0	4970.7
E1	0.20000E+12
A1	0.12000E-04
PR1	0.30000
T1	5.9000
K1	60.500
E2	0.34500E+09
A2	0.90000E-04
PR2	0.48000
T2	5.0000
K2	0.24000
E3	0.12700E+10
A3	0.13000E-03

PR3	0.35000
T3	2.8000
K3	0.27700
E4	0.94000E+09
A4	0.10000E-03
PR4	0.49000
T4	40.000
K4	0.12000E-01
E5	0.15000E+07
A5	0.11000E-03
PR5	0.40000
T5	8.0000
K5	0.21000
E6	0.10000E+07
A6	0.11000E-03
PR6	0.40000
T6	3.0000
K6	0.21000
E7	0.30000E+06
A7	0.11000E-03
PR7	0.40000
T7	91.200
K7	3.8500
TINF	30.000
HINF	0.18900

Response = 0.42660E+09

1==========

***** OUTPUT SUMMARY *****

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PROBLEM TITLE: LNG HOSE

RESPONSE FUNCTION (LIMIT STATE): QUADRATIC APPROXIMATION (NO MIXED TERMS)

PROBABILISTIC ANALYSIS METHOD: ADV. FIRST-ORDER RELIABILITY METHOD
(LINEARIZATION AND 3-PARA. NORMAL FIT)

APPROXIMATE STATISTICS FOR Z:
MEDIAN = 0.4439E+09

MEAN = 0.5731E+09
STANDARD DEVIATION = 0.7078E+08

NOTE: Standardized Normal Variates are used in the following analysis. This means that the random variable, u, represents a normal probability distribution with mean = 0 and standard deviation = 1. For example, u = -3 implies that the chance of observing a u value <= -3 is .00135 (cdf). Also, u = 3 implies that the chance of observing a u value <= 3 is 0.99875.

Start PLEVELS analysis. First find Z to cover -3.0903 < u < 3.0903

1 Z(=Z0)	z=(Z-ZMEAN)/ZSTD	u	PROB.(Z<Z0)
0.34093E+09	-0.32804E+01	0.11450E+01	0.8738857E+00
0.41171E+09	-0.22804E+01	-0.72052E+00	0.2356029E+00
0.55326E+09	-0.28044E+00	0.88677E+00	0.8123975E+00
0.62404E+09	0.71956E+00	0.15392E+01	0.9381167E+00
0.69481E+09	0.17196E+01	0.20858E+01	0.9815032E+00
0.76559E+09	0.27196E+01	0.25374E+01	0.9944162E+00
0.83637E+09	0.37196E+01	0.29114E+01	0.9982007E+00
0.90714E+09	0.47196E+01	0.32610E+01	0.9994449E+00

Start interpolation process to find Z0 for requested probabilities.

For probability (prob., u) = 0.001000000 -3.0903

For probability (prob., u) = 0.010000000 -2.3263

For probability (prob., u) = 0.100000000 -1.2816

For probability (prob., u) = 0.200000000 -0.8416

For probability (prob., u) = 0.400000000 -0.2533

For probability (prob., u) = 0.600000000 0.2533

For probability (prob., u) = 0.800000000 0.8416

For probability (prob., u) = 0.950000000 1.6449

For probability (prob., u) = 0.990000000 2.3263

For probability (prob., u) = 0.999000000 3.0903
1

CUMULATIVE PROBABILITY VALUE (Z0)	RESPONSE/PERFORMANCE FUNCTION
1.00000000E-03	3.57983773E+08
1.00000000E-02	3.57983773E+08
1.00000000E-01	3.64828974E+08
2.00000000E-01	4.01299946E+08
4.00000000E-01	4.43851368E+08
6.00000000E-01	4.91435754E+08
8.00000000E-01	5.48333003E+08
9.00000000E-01	5.93862637E+08
9.50000000E-01	6.36990201E+08
9.90000000E-01	7.29958131E+08
9.99000000E-01	8.72429734E+08

Recalculate Probability Using ANALTYPE=1 (zlevels) option
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.35798E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04

PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	-0.7800	-147.5
P0	-0.0379	149.4
H0	-0.0078	4967.
E1	-0.8847	0.1823E+12
A1	-0.3358	0.1160E-04
PR1	0.0121	0.3004
T1	0.0015	5.901
K1	0.0003	60.50
E2	-0.0038	0.3449E+09
A2	-0.1445	0.8870E-04
PR2	-0.0040	0.4798
T2	-0.0337	4.983
K2	-0.0031	0.2399
E3	-0.0020	0.1270E+10

A3	0.0008	0.1300E-03
PR3	0.0002	0.3500
T3	0.0001	2.800
K3	0.0000	0.2770
E4	0.0007	0.9401E+09
A4	-0.0020	0.9998E-04
PR4	0.0003	0.4900
T4	-0.0002	40.00
K4	0.0029	0.1200E-01
E5	0.0000	0.1500E+07
A5	0.1653	0.1118E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	0.2076	3.062
K6	-0.0004	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	-0.0070	91.14
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	-0.2644	0.2044

Standard normal variate (u) = -1.2914

Probability (Z<=Z0) = Probability u < -1.2914 = 0.9827644852E-01

1

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.35798E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11

A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	-0.6503	-149.6
P0	(X-A)**2	157.	0.0316	149.5
H0	(X-A)**2	0.532E+04	0.0065	4967.

E1	NONE	N/A	-0.7376	0.1852E+12
A1	(X-A)**2	0.112E-04	-0.2707	0.1143E-04
PR1	(X-A)**2	-1.51	0.0101	0.3003
T1	(X-A)**2	6.09	-0.0012	5.901
K1	(X-A)**2	61.5	-0.0002	60.50
E2	(X-A)**2	0.172E+08	-0.0032	0.3449E+09
A2	(X-A)**2	0.876E-04	-0.4375	0.8402E-04
PR2	(X-A)**2	0.481	0.0033	0.4798
T2	(X-A)**2	5.28	0.0281	4.986
K2	(X-A)**2	-0.132	-0.0026	0.2399
E3	(X-A)**2	0.135E+10	0.0017	0.1270E+10
A3	(X-A)**2	0.130E-03	-0.0014	0.1300E-03
PR3	(X-A)**2	0.359	-0.0002	0.3500
T3	NONE	N/A	0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	-0.0006	0.9401E+09
A4	(X-A)**2	0.999E-04	-0.0026	0.9997E-04
PR4	(X-A)**2	0.498	-0.0002	0.4900
T4	(X-A)**2	39.9	-0.0002	40.00
K4	(X-A)**2	0.155E-01	-0.0024	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	-0.1502	0.1117E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	0.2213	3.131
K6	(X-A)**2	0.205	-0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	0.0058	91.15
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	0.2317	0.2007

Standard normal variate (u) = -1.3327

Probability (Z<=Z0) = Probability u < -1.3327 = 0.9132142880E-01

Limit State Value (Z0) = 0.35798E+09
Standard Normal Variate (u) = -1.3327

Probability (Z<=Z0) = Probability u < -1.3327 = 0.9132142880E-01
Probability (Z>Z0) = Probability u >= -1.3327 = 0.9086785712
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.35798E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05

A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	-0.7800	-147.5
P0	-0.0379	149.4
H0	-0.0078	4967.
E1	-0.8847	0.1823E+12
A1	-0.3358	0.1160E-04
PR1	0.0121	0.3004
T1	0.0015	5.901
K1	0.0003	60.50
E2	-0.0038	0.3449E+09
A2	-0.1445	0.8870E-04
PR2	-0.0040	0.4798
T2	-0.0337	4.983
K2	-0.0031	0.2399
E3	-0.0020	0.1270E+10
A3	0.0008	0.1300E-03
PR3	0.0002	0.3500
T3	0.0001	2.800
K3	0.0000	0.2770
E4	0.0007	0.9401E+09
A4	-0.0020	0.9998E-04
PR4	0.0003	0.4900
T4	-0.0002	40.00
K4	0.0029	0.1200E-01
E5	0.0000	0.1500E+07
A5	0.1653	0.1118E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	0.2076	3.062
K6	-0.0004	0.2100

E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	-0.0070	91.14
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	-0.2644	0.2044

Standard normal variate (u) = -1.2914

Probability (Z<=Z0) = Probability u < -1.2914 = 0.9827644852E-01

1

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.35798E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02

E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	-0.6503	-149.6
P0	(X-A)**2	157.	0.0316	149.5
H0	(X-A)**2	0.532E+04	0.0065	4967.
E1	NONE	N/A	-0.7376	0.1852E+12
A1	(X-A)**2	0.112E-04	-0.2707	0.1143E-04
PR1	(X-A)**2	-1.51	0.0101	0.3003
T1	(X-A)**2	6.09	-0.0012	5.901
K1	(X-A)**2	61.5	-0.0002	60.50
E2	(X-A)**2	0.172E+08	-0.0032	0.3449E+09
A2	(X-A)**2	0.876E-04	-0.4375	0.8402E-04
PR2	(X-A)**2	0.481	0.0033	0.4798
T2	(X-A)**2	5.28	0.0281	4.986
K2	(X-A)**2	-0.132	-0.0026	0.2399
E3	(X-A)**2	0.135E+10	0.0017	0.1270E+10
A3	(X-A)**2	0.130E-03	-0.0014	0.1300E-03
PR3	(X-A)**2	0.359	-0.0002	0.3500
T3	NONE	N/A	0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	-0.0006	0.9401E+09
A4	(X-A)**2	0.999E-04	-0.0026	0.9997E-04
PR4	(X-A)**2	0.498	-0.0002	0.4900
T4	(X-A)**2	39.9	-0.0002	40.00

K4	(X-A)**2	0.155E-01	-0.0024	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	-0.1502	0.1117E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	0.2213	3.131
K6	(X-A)**2	0.205	-0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	0.0058	91.15
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	0.2317	0.2007

Standard normal variate (u) = -1.3327

Probability (Z<=Z0) = Probability u < -1.3327 = 0.9132142880E-01

Limit State Value (Z0) = 0.35798E+09
Standard Normal Variate (u) = -1.3327
Probability (Z<=Z0) = Probability u < -1.3327 = 0.9132142880E-01
Probability (Z>Z0) = Probability u >= -1.3327 = 0.9086785712
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.36483E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900

K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	-0.7164	-148.5
P0	-0.0346	149.5
H0	-0.0071	4967.
E1	-0.8125	0.1837E+12
A1	-0.3177	0.1162E-04
PR1	0.0111	0.3003

T1	0.0014	5.901
K1	0.0003	60.50
E2	-0.0035	0.3449E+09
A2	-0.1314	0.8882E-04
PR2	-0.0036	0.4798
T2	-0.0308	4.985
K2	-0.0028	0.2399
E3	-0.0018	0.1270E+10
A3	0.0012	0.1300E-03
PR3	0.0002	0.3500
T3	0.0001	2.800
K3	0.0000	0.2770
E4	0.0006	0.9401E+09
A4	-0.0024	0.9998E-04
PR4	0.0003	0.4900
T4	-0.0002	40.00
K4	0.0027	0.1200E-01
E5	0.0000	0.1500E+07
A5	0.1563	0.1117E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	0.1812	3.054
K6	-0.0004	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	-0.0063	91.14
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	-0.2325	0.2051

Standard normal variate (u) = -1.1855

Probability (Z<=Z0) = Probability u < -1.1855 = 0.1179057332

1

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.36483E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	-0.5977	-150.4
P0	(X-A)**2	157.	0.0289	149.6
H0	(X-A)**2	0.532E+04	0.0059	4968.
E1	NONE	N/A	-0.6778	0.1864E+12
A1	(X-A)**2	0.112E-04	-0.2380	0.1155E-04
PR1	(X-A)**2	-1.51	0.0093	0.3003
T1	(X-A)**2	6.09	-0.0011	5.901
K1	(X-A)**2	61.5	-0.0002	60.50
E2	(X-A)**2	0.172E+08	-0.0029	0.3449E+09
A2	(X-A)**2	0.876E-04	-0.3580	0.8391E-04
PR2	(X-A)**2	0.481	0.0030	0.4799
T2	(X-A)**2	5.28	0.0257	4.987
K2	(X-A)**2	-0.132	-0.0024	0.2399
E3	(X-A)**2	0.135E+10	0.0015	0.1270E+10
A3	(X-A)**2	0.130E-03	-0.0010	0.1300E-03
PR3	(X-A)**2	0.359	-0.0002	0.3500
T3	NONE	N/A	0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	-0.0005	0.9401E+09
A4	(X-A)**2	0.999E-04	-0.0021	0.9998E-04
PR4	(X-A)**2	0.498	-0.0002	0.4900
T4	(X-A)**2	39.9	-0.0002	40.00
K4	(X-A)**2	0.155E-01	-0.0022	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	-0.1405	0.1115E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	0.1965	3.125
K6	(X-A)**2	0.205	-0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	0.0053	91.15
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	0.1976	0.2017

Standard normal variate (u) = -1.2816

Probability (Z<=Z0) = Probability u < -1.2816 = 0.1000001620

Limit State Value (Z0) = 0.36483E+09
Standard Normal Variate (u) = -1.2816
Probability (Z<=Z0) = Probability u < -1.2816 = 0.1000001620
Probability (Z>Z0) = Probability u >= -1.2816 = 0.8999998380
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.40130E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01

T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	-0.3706	-154.1
P0	-0.0173	149.7
H0	-0.0037	4969.
E1	-0.4202	0.1916E+12
A1	-0.2116	0.1175E-04
PR1	0.0057	0.3002
T1	0.0007	5.900
K1	0.0001	60.50
E2	-0.0018	0.3449E+09
A2	-0.0874	0.8921E-04
PR2	-0.0018	0.4799
T2	-0.0155	4.992
K2	-0.0015	0.2400
E3	-0.0009	0.1270E+10
A3	0.0008	0.1300E-03
PR3	0.0001	0.3500
T3	0.0000	2.800
K3	0.0000	0.2770
E4	0.0003	0.9400E+09
A4	-0.0016	0.9998E-04
PR4	0.0001	0.4900
T4	-0.0001	40.00
K4	0.0014	0.1200E-01
E5	0.0000	0.1500E+07
A5	0.0954	0.1110E-03

PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0000	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	0.0742	3.022
K6	-0.0002	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	-0.0030	91.17
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	-0.0982	0.2079

Standard normal variate (u) = -0.6255

Probability (Z<=Z0) = Probability u < -0.6255 = 0.2658340192

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.40130E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800

K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	-0.2916	-155.3
P0	(X-A)**2	157.	0.0136	149.8
H0	(X-A)**2	0.532E+04	0.0029	4969.
E1	NONE	N/A	-0.3306	0.1934E+12
A1	(X-A)**2	0.112E-04	-0.1255	0.1170E-04
PR1	(X-A)**2	-1.51	0.0045	0.3001
T1	(X-A)**2	6.09	-0.0006	5.900
K1	(X-A)**2	61.5	-0.0001	60.50
E2	(X-A)**2	0.172E+08	-0.0014	0.3450E+09
A2	(X-A)**2	0.876E-04	-0.1326	0.8576E-04
PR2	(X-A)**2	0.481	0.0014	0.4799
T2	(X-A)**2	5.28	0.0122	4.994
K2	(X-A)**2	-0.132	-0.0012	0.2400
E3	(X-A)**2	0.135E+10	0.0007	0.1270E+10
A3	(X-A)**2	0.130E-03	-0.0006	0.1300E-03
PR3	NONE	N/A	0.0001	0.3500

T3	NONE	N/A	0.0000	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	-0.0003	0.9400E+09
A4	(X-A)**2	0.999E-04	-0.0013	0.9999E-04
PR4	(X-A)**2	0.498	-0.0001	0.4900
T4	NONE	N/A	-0.0001	40.00
K4	(X-A)**2	0.155E-01	-0.0011	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	-0.1024	0.1115E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0000	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	0.0837	3.082
K6	(X-A)**2	0.205	-0.0001	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	0.0024	91.18
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	0.0958	0.2045

Standard normal variate (u) = -0.8417

Probability (Z<=Z0) = Probability u < -0.8417 = 0.1999886809

Limit State Value (Z0) = 0.40130E+09
Standard Normal Variate (u) = -0.8417
Probability (Z<=Z0) = Probability u < -0.8417 = 0.1999886809
Probability (Z>Z0) = Probability u >= -0.8417 = 0.8000113191
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.44385E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00

P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

	VARIABLE	u VALUE	x VALUE
+	_____	_____	_____

T0	-0.0004	-160.0
P0	0.0000	150.0
H0	0.0000	4971.
E1	-0.0004	0.2000E+12
A1	-0.0003	0.1200E-04
PR1	0.0000	0.3000
T1	0.0000	5.900
K1	0.0000	60.50
E2	0.0000	0.3450E+09
A2	-0.0001	0.9000E-04
PR2	0.0000	0.4800
T2	0.0000	5.000
K2	0.0000	0.2400
E3	0.0000	0.1270E+10
A3	0.0000	0.1300E-03
PR3	0.0000	0.3500
T3	0.0000	2.800
K3	0.0000	0.2770
E4	0.0000	0.9400E+09
A4	0.0000	0.1000E-03
PR4	0.0000	0.4900
T4	0.0000	40.00
K4	0.0000	0.1200E-01
E5	0.0000	0.1500E+07
A5	0.0001	0.1100E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0000	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	0.0001	3.000
K6	0.0000	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0000	91.20
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	-0.0001	0.2100

Standard normal variate (u) = -0.0007

Probability (Z<=Z0) = Probability u < -0.0007 = 0.4997273829

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.44385E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850

TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	-0.0017	-160.0
P0	NONE	N/A	-0.0001	150.0
H0	NONE	N/A	0.0000	4971.
E1	NONE	N/A	-0.0020	0.2000E+12
A1	(X-A)**2	0.112E-04	-0.0009	0.1199E-04
PR1	NONE	N/A	0.0000	0.3000
T1	NONE	N/A	0.0000	5.900
K1	NONE	N/A	0.0000	60.50
E2	NONE	N/A	0.0000	0.3450E+09
A2	(X-A)**2	0.876E-04	-0.0008	0.9003E-04
PR2	NONE	N/A	0.0000	0.4800
T2	NONE	N/A	-0.0001	5.000
K2	NONE	N/A	0.0000	0.2400
E3	NONE	N/A	0.0000	0.1270E+10
A3	NONE	N/A	0.0000	0.1300E-03
PR3	NONE	N/A	0.0000	0.3500
T3	NONE	N/A	0.0000	2.800
K3	NONE	N/A	0.0000	0.2770
E4	NONE	N/A	0.0000	0.9400E+09
A4	NONE	N/A	0.0000	0.1000E-03
PR4	NONE	N/A	0.0000	0.4900
T4	NONE	N/A	0.0000	40.00
K4	NONE	N/A	0.0000	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	-0.0008	0.1097E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0000	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	NONE	N/A	0.0003	3.000
K6	NONE	N/A	0.0000	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	NONE	N/A	0.0000	91.20

K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	NONE	N/A	-0.0004	0.2100

Standard normal variate (u) = -0.3577

Probability (Z<=Z0) = Probability u < -0.3577 = 0.3602659294

Limit State Value (Z0) = 0.44385E+09
Standard Normal Variate (u) = -0.3577
Probability (Z<=Z0) = Probability u < -0.3577 = 0.3602659294
Probability (Z>Z0) = Probability u >= -0.3577 = 0.6397340706
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.49144E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000

K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.2857	-164.6
P0	0.0125	150.2
H0	0.0028	4972.
E1	0.3237	0.2065E+12
A1	0.3890	0.1247E-04
PR1	-0.0044	0.2999
T1	-0.0005	5.900
K1	-0.0001	60.50
E2	0.0014	0.3450E+09
A2	0.1608	0.9145E-04
PR2	0.0012	0.4801
T2	0.0114	5.006
K2	0.0011	0.2400
E3	0.0007	0.1270E+10
A3	-0.0014	0.1300E-03
PR3	-0.0001	0.3500
T3	0.0000	2.800
K3	0.0000	0.2770
E4	-0.0003	0.9400E+09
A4	0.0028	0.1000E-03
PR4	-0.0001	0.4900

T4	0.0001	40.00
K4	-0.0011	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.1112	0.1088E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	0.0000	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0410	2.988
K6	0.0001	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0021	91.22
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.0561	0.2112

Standard normal variate (u) = 0.6174

Probability (Z<=Z0) = Probability u < 0.6174 = 0.7315071944

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ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.49144E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01

T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.2610	-164.2
P0	(X-A)**2	157.	-0.0114	150.2
H0	(X-A)**2	0.532E+04	-0.0026	4972.
E1	NONE	N/A	0.2958	0.2059E+12
A1	(X-A)**2	0.112E-04	0.3724	0.1224E-04
PR1	(X-A)**2	-1.51	-0.0040	0.2999
T1	(X-A)**2	6.09	0.0005	5.900
K1	(X-A)**2	61.5	0.0001	60.50
E2	(X-A)**2	0.172E+08	0.0013	0.3450E+09
A2	(X-A)**2	0.876E-04	0.1883	0.9376E-04

PR2	(X-A)**2	0.481	-0.0011	0.4801
T2	(X-A)**2	5.28	-0.0104	5.005
K2	(X-A)**2	-0.132	0.0010	0.2400
E3	(X-A)**2	0.135E+10	-0.0007	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0013	0.1300E-03
PR3	NONE	N/A	-0.0001	0.3500
T3	NONE	N/A	0.0000	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0002	0.9400E+09
A4	(X-A)**2	0.999E-04	0.0026	0.1000E-03
PR4	(X-A)**2	0.498	0.0001	0.4900
T4	NONE	N/A	0.0001	40.00
K4	(X-A)**2	0.155E-01	0.0010	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.1170	0.1062E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	0.0000	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0374	2.989
K6	(X-A)**2	0.205	0.0001	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0019	91.22
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.0513	0.2111

Standard normal variate (u) = 0.2566

Probability (Z<=Z0) = Probability u < 0.2566 = 0.6012574731

Limit State Value (Z0) = 0.49144E+09
Standard Normal Variate (u) = 0.2566
Probability (Z<=Z0) = Probability u < 0.2566 = 0.6012574731
Probability (Z>Z0) = Probability u >= 0.2566 = 0.3987425269
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.54833E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.4444	-167.1
P0	0.0192	150.3
H0	0.0043	4973.
E1	0.5035	0.2101E+12
A1	0.9124	0.1309E-04
PR1	-0.0069	0.2998
T1	-0.0009	5.899
K1	-0.0002	60.50
E2	0.0022	0.3451E+09
A2	0.3772	0.9340E-04
PR2	0.0019	0.4801
T2	0.0175	5.009
K2	0.0018	0.2400
E3	0.0011	0.1270E+10
A3	-0.0033	0.1300E-03
PR3	-0.0001	0.3500
T3	-0.0001	2.800
K3	0.0000	0.2770
E4	-0.0004	0.9400E+09
A4	0.0064	0.1001E-03
PR4	-0.0002	0.4900
T4	0.0001	40.00
K4	-0.0016	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.1977	0.1078E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	-0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0596	2.982
K6	0.0002	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0032	91.23
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.0822	0.2117

Standard normal variate (u) = 1.2149

Probability (Z<=Z0) = Probability u < 1.2149 = 0.8877986214

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ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.54833E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04

PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.6215	-169.9
P0	(X-A)**2	157.	-0.0268	150.4
H0	(X-A)**2	0.532E+04	-0.0061	4974.
E1	NONE	N/A	0.7043	0.2141E+12
A1	(X-A)**2	0.112E-04	2.3503	0.1245E-04
PR1	(X-A)**2	-1.51	-0.0096	0.2997
T1	(X-A)**2	6.09	0.0012	5.899
K1	(X-A)**2	61.5	0.0002	60.50
E2	(X-A)**2	0.172E+08	0.0030	0.3451E+09
A2	(X-A)**2	0.876E-04	0.5913	0.9636E-04
PR2	(X-A)**2	0.481	-0.0026	0.4801
T2	(X-A)**2	5.28	-0.0245	5.012
K2	(X-A)**2	-0.132	0.0025	0.2401
E3	(X-A)**2	0.135E+10	-0.0016	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0046	0.1299E-03
PR3	(X-A)**2	0.359	0.0002	0.3500
T3	NONE	N/A	-0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0006	0.9399E+09
A4	(X-A)**2	0.999E-04	0.0089	0.1001E-03
PR4	(X-A)**2	0.498	0.0002	0.4900
T4	(X-A)**2	39.9	0.0002	40.00
K4	(X-A)**2	0.155E-01	0.0023	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.2848	0.1049E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	-0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07

A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0834	2.975
K6	(X-A)**2	0.205	0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0044	91.24
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.1149	0.2124

Standard normal variate (u) = 0.8448

Probability (Z<=Z0) = Probability u < 0.8448 = 0.8008811774

Limit State Value (Z0) = 0.54833E+09
Standard Normal Variate (u) = 0.8448
Probability (Z<=Z0) = Probability u < 0.8448 = 0.8008811774
Probability (Z>Z0) = Probability u >= 0.8448 = 0.1991188226
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.59386E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09

A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.5049	-168.1
P0	0.0217	150.3
H0	0.0049	4973.
E1	0.5721	0.2114E+12
A1	1.2850	0.1354E-04
PR1	-0.0078	0.2998
T1	-0.0010	5.899
K1	-0.0002	60.50
E2	0.0025	0.3451E+09
A2	0.5315	0.9478E-04
PR2	0.0021	0.4801
T2	0.0198	5.010
K2	0.0020	0.2400

E3	0.0013	0.1270E+10
A3	-0.0045	0.1299E-03
PR3	-0.0001	0.3500
T3	-0.0001	2.800
K3	0.0000	0.2770
E4	-0.0005	0.9400E+09
A4	0.0088	0.1001E-03
PR4	-0.0002	0.4900
T4	0.0001	40.00
K4	-0.0019	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.2380	0.1074E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	-0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0660	2.980
K6	0.0003	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0035	91.23
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.0912	0.2119

Standard normal variate (u) = 1.6082

Probability (Z<=Z0) = Probability u < 1.6082 = 0.9461007273

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.59386E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05

PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.6953	-171.1
P0	(X-A)**2	157.	-0.0298	150.4
H0	(X-A)**2	0.532E+04	-0.0068	4974.
E1	NONE	N/A	0.7879	0.2158E+12

A1	(X-A)**2	0.112E-04	5.6927	0.1302E-04
PR1	(X-A)**2	-1.51	-0.0107	0.2997
T1	(X-A)**2	6.09	0.0013	5.899
K1	(X-A)**2	61.5	0.0003	60.50
E2	(X-A)**2	0.172E+08	0.0034	0.3451E+09
A2	(X-A)**2	0.876E-04	0.7806	0.9742E-04
PR2	(X-A)**2	0.481	-0.0029	0.4801
T2	(X-A)**2	5.28	-0.0273	5.014
K2	(X-A)**2	-0.132	0.0028	0.2401
E3	(X-A)**2	0.135E+10	-0.0018	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0062	0.1299E-03
PR3	(X-A)**2	0.359	0.0002	0.3500
T3	NONE	N/A	-0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0006	0.9399E+09
A4	(X-A)**2	0.999E-04	0.0121	0.1001E-03
PR4	(X-A)**2	0.498	0.0003	0.4900
T4	(X-A)**2	39.9	0.0002	40.00
K4	(X-A)**2	0.155E-01	0.0026	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.3438	0.1040E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	-0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0911	2.972
K6	(X-A)**2	0.205	0.0004	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0049	91.24
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.1258	0.2127

Standard normal variate (u) = 1.2844

Probability (Z<=Z0) = Probability u < 1.2844 = 0.9005053513

Limit State Value (Z0) = 0.59386E+09
Standard Normal Variate (u) = 1.2844
Probability (Z<=Z0) = Probability u < 1.2844 = 0.9005053513

Probability (Z>Z0) = Probability u >= 1.2844 = 0.9949464866E-01
FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.63699E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120

K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.5400	-168.6
P0	0.0231	150.3
H0	0.0053	4973.
E1	0.6118	0.2122E+12
A1	1.5976	0.1392E-04
PR1	-0.0083	0.2997
T1	-0.0010	5.899
K1	-0.0002	60.50
E2	0.0026	0.3451E+09
A2	0.6610	0.9595E-04
PR2	0.0022	0.4801
T2	0.0212	5.011
K2	0.0021	0.2401
E3	0.0014	0.1270E+10
A3	-0.0056	0.1299E-03
PR3	-0.0001	0.3500
T3	-0.0001	2.800
K3	0.0000	0.2770
E4	-0.0005	0.9400E+09
A4	0.0107	0.1001E-03
PR4	-0.0002	0.4900
T4	0.0001	40.00
K4	-0.0020	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.2626	0.1071E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	-0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0698	2.979
K6	0.0003	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000

T7	0.0038	91.23
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.0965	0.2120

Standard normal variate (u) = 1.9338

Probability (Z<=Z0) = Probability u < 1.9338 = 0.9734320469

1

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.63699E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01

T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.6899	-171.0
P0	(X-A)**2	157.	-0.0295	150.4
H0	(X-A)**2	0.532E+04	-0.0067	4974.
E1	NONE	N/A	0.7817	0.2156E+12
A1	(X-A)**2	0.112E-04	6.2363	0.1354E-04
PR1	(X-A)**2	-1.51	-0.0107	0.2997
T1	(X-A)**2	6.09	0.0013	5.899
K1	(X-A)**2	61.5	0.0003	60.50
E2	(X-A)**2	0.172E+08	0.0033	0.3451E+09
A2	(X-A)**2	0.876E-04	0.9297	0.9819E-04
PR2	(X-A)**2	0.481	-0.0028	0.4801
T2	(X-A)**2	5.28	-0.0271	5.014
K2	(X-A)**2	-0.132	0.0027	0.2401
E3	(X-A)**2	0.135E+10	-0.0018	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0071	0.1299E-03
PR3	(X-A)**2	0.359	0.0002	0.3500
T3	NONE	N/A	-0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0006	0.9399E+09
A4	(X-A)**2	0.999E-04	0.0136	0.1001E-03
PR4	(X-A)**2	0.498	0.0003	0.4900
T4	(X-A)**2	39.9	0.0002	40.00
K4	(X-A)**2	0.155E-01	0.0026	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.3519	0.1039E-03

PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	-0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0891	2.973
K6	(X-A)**2	0.205	0.0004	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0048	91.24
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.1232	0.2126

Standard normal variate (u) = 1.6449

Probability (Z<=Z0) = Probability u < 1.6449 = 0.9499997159

Limit State Value (Z0) = 0.63699E+09
Standard Normal Variate (u) = 1.6449
Probability (Z<=Z0) = Probability u < 1.6449 = 0.9499997159
Probability (Z>Z0) = Probability u >= 1.6449 = 0.5000028409E-01
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.72996E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05

PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.5844	-169.4
P0	0.0249	150.4
H0	0.0057	4974.
E1	0.6621	0.2132E+12
A1	2.1737	0.1461E-04
PR1	-0.0090	0.2997
T1	-0.0011	5.899
K1	-0.0002	60.50
E2	0.0028	0.3451E+09

A2	0.8997	0.9810E-04
PR2	0.0024	0.4801
T2	0.0228	5.011
K2	0.0023	0.2401
E3	0.0015	0.1270E+10
A3	-0.0074	0.1299E-03
PR3	-0.0001	0.3500
T3	-0.0001	2.800
K3	0.0000	0.2770
E4	-0.0005	0.9400E+09
A4	0.0142	0.1001E-03
PR4	-0.0002	0.4900
T4	0.0002	40.00
K4	-0.0022	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.2978	0.1067E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	-0.0001	0.2100
E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0744	2.978
K6	0.0003	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0041	91.24
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.1029	0.2122

Standard normal variate (u) = 2.5339

Probability (Z<=Z0) = Probability u < 2.5339 = 0.9943598139

1

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.72996E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD

+

T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.6614	-170.6
P0	(X-A)**2	157.	-0.0282	150.4
H0	(X-A)**2	0.532E+04	-0.0065	4974.
E1	NONE	N/A	0.7494	0.2150E+12
A1	(X-A)**2	0.112E-04	5.5466	0.1449E-04
PR1	(X-A)**2	-1.51	-0.0102	0.2997
T1	(X-A)**2	6.09	0.0013	5.899
K1	(X-A)**2	61.5	0.0003	60.50
E2	(X-A)**2	0.172E+08	0.0032	0.3451E+09
A2	(X-A)**2	0.876E-04	1.0422	0.9843E-04
PR2	(X-A)**2	0.481	-0.0027	0.4801
T2	(X-A)**2	5.28	-0.0259	5.013
K2	(X-A)**2	-0.132	0.0026	0.2401
E3	(X-A)**2	0.135E+10	-0.0017	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0084	0.1299E-03
PR3	(X-A)**2	0.359	0.0002	0.3500
T3	NONE	N/A	-0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0006	0.9399E+09
A4	(X-A)**2	0.999E-04	0.0159	0.1002E-03
PR4	(X-A)**2	0.498	0.0003	0.4900
T4	(X-A)**2	39.9	0.0002	40.00
K4	(X-A)**2	0.155E-01	0.0025	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.3442	0.1044E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	-0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0840	2.975
K6	(X-A)**2	0.205	0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0046	91.24
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.1163	0.2124

Standard normal variate (u) = 2.3264

Probability (Z<=Z0) = Probability u < 2.3264 = 0.9900011115

Limit State Value (Z0) = 0.72996E+09
Standard Normal Variate (u) = 2.3264
Probability (Z<=Z0) = Probability u < 2.3264 = 0.9900011115
Probability (Z>Z0) = Probability u >= 2.3264 = 0.9998888466E-02
1

FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.87243E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04
PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06

A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	u VALUE	x VALUE
T0	0.6195	-169.9
P0	0.0263	150.4
H0	0.0060	4974.
E1	0.7020	0.2140E+12
A1	2.8941	0.1547E-04
PR1	-0.0096	0.2997
T1	-0.0012	5.899
K1	-0.0002	60.50
E2	0.0030	0.3451E+09
A2	1.1985	0.1008E-03
PR2	0.0025	0.4801
T2	0.0242	5.012
K2	0.0025	0.2401
E3	0.0016	0.1270E+10
A3	-0.0097	0.1299E-03
PR3	-0.0002	0.3500
T3	-0.0001	2.800
K3	0.0000	0.2770
E4	-0.0006	0.9399E+09
A4	0.0182	0.1002E-03
PR4	-0.0002	0.4900
T4	0.0002	40.00
K4	-0.0023	0.1200E-01
E5	0.0000	0.1500E+07
A5	-0.3268	0.1064E-03
PR5	0.0000	0.4000
T5	0.0000	8.000
K5	-0.0001	0.2100

E6	0.0000	0.1000E+07
A6	0.0000	0.1100E-03
PR6	0.0000	0.4000
T6	-0.0776	2.977
K6	0.0003	0.2100
E7	0.0000	0.3000E+06
A7	0.0000	0.1100E-03
PR7	0.0000	0.4000
T7	0.0043	91.24
K7	0.0000	3.850
TINF	0.0000	30.00
HINF	0.1075	0.2123

Standard normal variate (u) = 3.2886

Probability (Z<=Z0) = Probability u < 3.2886 = 0.9994965769

ADVANCED FIRST-ORDER PROBABILITY ANALYSIS

LIMIT STATE VALUE (Z=Z0) = 0.87243E+09

RANDOM VARIABLES (X)

VARIABLE	DISTRIBUTION	MEAN	STD
T0	NORMAL	-160.0	-16.00
P0	NORMAL	150.0	15.00
H0	NORMAL	4971.	497.1
E1	NORMAL	0.2000E+12	0.2000E+11
A1	NORMAL	0.1200E-04	0.1200E-05
PR1	NORMAL	0.3000	0.3000E-01
T1	NORMAL	5.900	0.5900
K1	NORMAL	60.50	6.050
E2	NORMAL	0.3450E+09	0.3450E+08
A2	NORMAL	0.9000E-04	0.9000E-05
PR2	NORMAL	0.4800	0.4800E-01
T2	NORMAL	5.000	0.5000
K2	NORMAL	0.2400	0.2400E-01
E3	NORMAL	0.1270E+10	0.1270E+09
A3	NORMAL	0.1300E-03	0.1300E-04
PR3	NORMAL	0.3500	0.3500E-01
T3	NORMAL	2.800	0.2800
K3	NORMAL	0.2770	0.2770E-01
E4	NORMAL	0.9400E+09	0.9400E+08
A4	NORMAL	0.1000E-03	0.1000E-04

PR4	NORMAL	0.4900	0.4900E-01
T4	NORMAL	40.00	4.000
K4	NORMAL	0.1200E-01	0.1200E-02
E5	NORMAL	0.1500E+07	0.1500E+06
A5	NORMAL	0.1100E-03	0.1100E-04
PR5	NORMAL	0.4000	0.4000E-01
T5	NORMAL	8.000	0.8000
K5	NORMAL	0.2100	0.2100E-01
E6	NORMAL	0.1000E+07	0.1000E+06
A6	NORMAL	0.1100E-03	0.1100E-04
PR6	NORMAL	0.4000	0.4000E-01
T6	NORMAL	3.000	0.3000
K6	NORMAL	0.2100	0.2100E-01
E7	NORMAL	0.3000E+06	0.3000E+05
A7	NORMAL	0.1100E-03	0.1100E-04
PR7	NORMAL	0.4000	0.4000E-01
T7	NORMAL	91.20	9.120
K7	NORMAL	3.850	0.3850
TINF	NORMAL	30.00	3.000
HINF	NORMAL	0.2100	0.2100E-01

MOST PROBABLE POINT IN THE TRANSFORMED u (STANDARDIZED NORMAL) SPACE

VARIABLE	TRANSFORMATION	A	u VALUE	x VALUE
T0	NONE	N/A	0.6692	-170.7
P0	(X-A)**2	157.	-0.0284	150.4
H0	(X-A)**2	0.532E+04	-0.0065	4974.
E1	NONE	N/A	0.7582	0.2152E+12
A1	(X-A)**2	0.112E-04	6.3271	0.1547E-04
PR1	(X-A)**2	-1.51	-0.0103	0.2997
T1	(X-A)**2	6.09	0.0013	5.899
K1	(X-A)**2	61.5	0.0003	60.50
E2	(X-A)**2	0.172E+08	0.0032	0.3451E+09
A2	(X-A)**2	0.876E-04	1.4401	0.9962E-04
PR2	(X-A)**2	0.481	-0.0027	0.4801
T2	(X-A)**2	5.28	-0.0261	5.013
K2	(X-A)**2	-0.132	0.0026	0.2401
E3	(X-A)**2	0.135E+10	-0.0017	0.1270E+10
A3	(X-A)**2	0.130E-03	0.0104	0.1299E-03
PR3	(X-A)**2	0.359	0.0002	0.3500
T3	NONE	N/A	-0.0001	2.800
K3	NONE	N/A	0.0000	0.2770
E4	(X-A)**2	0.101E+10	0.0006	0.9399E+09

A4	(X-A)**2	0.999E-04	0.0194	0.1002E-03
PR4	(X-A)**2	0.498	0.0003	0.4900
T4	(X-A)**2	39.9	0.0002	40.00
K4	(X-A)**2	0.155E-01	0.0025	0.1200E-01
E5	NONE	N/A	0.0000	0.1500E+07
A5	(X-A)**2	0.115E-03	0.3884	0.1039E-03
PR5	NONE	N/A	0.0000	0.4000
T5	NONE	N/A	0.0000	8.000
K5	NONE	N/A	-0.0001	0.2100
E6	NONE	N/A	0.0000	0.1000E+07
A6	NONE	N/A	0.0000	0.1100E-03
PR6	NONE	N/A	0.0000	0.4000
T6	(X-A)**2	2.90	-0.0839	2.975
K6	(X-A)**2	0.205	0.0003	0.2100
E7	NONE	N/A	0.0000	0.3000E+06
A7	NONE	N/A	0.0000	0.1100E-03
PR7	NONE	N/A	0.0000	0.4000
T7	(X-A)**2	91.6	-0.0046	91.24
K7	NONE	N/A	0.0000	3.850
TINF	NONE	N/A	0.0000	30.00
HINF	(X-A)**2	0.221	-0.1162	0.2124

Standard normal variate (u) = 3.0902

Probability (Z<=Z0) = Probability u < 3.0902 = 0.9989998774

Limit State Value (Z0) = 0.87243E+09
Standard Normal Variate (u) = 3.0902
Probability (Z<=Z0) = Probability u < 3.0902 = 0.9989998774
Probability (Z>Z0) = Probability u >= 3.0902 = 0.1000122581E-02

STOP DUE TO FPI ANALYSIS COMPLETE INPUT DEVICE 5

ELAPSED CPU TIME: 1.53 seconds